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TRANSACTIONS

OF THE

IOWA STATE MEDICAL SOCIETY,

FORTY-THIRD ANNUAL SESSION,

1894.

MEETING AT

DES MOINES, MAY 16TH, 17TH AND 18TH.

VOLUME XII.

OMAHA, NEBKASKA:
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1894.

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PART I.

MINUTES.

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PROCEEDINGS OF THE FORTY-THIRD ANNUAL SESSION

OF THE

IOWA STATE MEDICAL SOCIETY,

HELD AT

DES MOINES, MAY 16TH, 17TH AND 18TH, 1894.

FIRST DAY, WEDNESDAY, MAY 16TH.

MORNING SESSION.

The Society convened in the Auditorium of the Y. M. C. A. Building and was called to order at ten o'clock by the president, Dr. Lewis Schooler. Opening prayer was offered by Rev. H. Tilden, of Des Moines.

Officers present: President, L. Schooler, Des Moines; First Vice-President, A. L. Wright, Carroll; Secretary, C. S. Chase, Waterloo; Assistant Secretary, C. E. Currie, Des Moines; Treasurer, G. R. Skinner, Cedar Rapids.

ADDRESS OF WELCOME BY MAYOR ISAAC L. HILLIS, DES MOINES.

He said:

Des Moines stands with smiling welcome to greet all her guests—but the welcome she extends to this body of physicians is cordial in the extreme. Your profession is a most honorable one. It is one in which all that is best and noblest in man is stimulated to high endeavor. Your march of progress is ever onward, so that to-day if any one profession should outrank all others it is that of the physician.

In no other calling, not even excepting the ministry itself, is given so full and so complete an opportunity for the development and practice of all that pertains to "the higher life." The physician is *par excellence* a man of science. He is familiar with the lore of sages and he has every new discovery as an event expected. He cultivates the social graces and is the trusted adviser of men and women and the beloved friend of children. Education and observation combine to broaden his thought and widen his understanding, while religion moulds his charactor into beauty and symmetry, crowning his life with that touch which gives completeness. It is the physician as well as the minister of the gospel who whispers into dying ears the story of the cross and of the welcome the Heavenly Father keeps for even the most prodigal of his sons.

You are heroes, you doctors. When pestilence walks abroad in the land and every avenue of egress is filled with affrighted fugitives, you calmly move about among the stricken, leaving healing and comfort in your train. How anxious is the physician for his patient! Who is not familiar with his self-denial, his readiness to come to help at a moment's notice at any hour, in any weather; his tender solicitude for the sufferer, his words of good cheer and hopefullness even when the clouds seem heaviest, his patience with those whose mistaken zeal oft-times undoes what he has labored to perform and his forbearance under complaint. But some will say that the doctor is paid to heal the sick—exactly; but after the remedy is prescribed he does not lose interest in the case as he pockets the money. No, no, mere money does not pay the doctor. We owe him our gratitude and our high respect. The family physician is the family friend. He knows our secrets, our loves, our hopes and our fears. He is the universal confidant and he is deserving of the trust. His life should be free from follies and evils which mar a perfect manhood; for to him is given entrance into the

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holy of holies, the room where a new born soul enters into life, and his is the hand to close, in the last long sleep, the eyes of the world-worn pilgrim to whom the angel of death has whispered, it is finished.

Des Moines is especially rich in her physicians. We have men of science among us. Men whose talents rank in the highest class and whose names are widely known. What is true of Des Moines is true of all Iowa and our city is honored to-day by the presence of so many distinguished men. You have met together to do us and each other good. The program is a feast of good things and the discussion which will follow the reading of these papers can but result in good. In extending to this convention a welcome and the freedom of our beautiful city I feel that the pleasure will be mutual—the city's in the enjoyment of her guests and the convention's in your appreciation of all the unrivalled advantages of Iowa's capital. As you go hence and plan for future gatherings remember that the gates of Des Moines are ever open and be it as guest or citizen a hearty welcome awaits you.

Mr. Hillis was followed by Dr. James T. Priestly, who delivered an address of welcome for the local profession. He said:

Fellows of the Iowa State Medical Association:

On behalf of the local profession, allow me to extend to you a hearty welcome and a sincere wish that you have a pleasant and profitable time while in our city. I am sure that the words of praise and commendation bestowed upon our profession by His Honor, the Mayor, was meant in full, having successfully gotten rid of Kelley's Army, I think he is in condition to welcome the gathering of any kind, even a convention of undertakers.

Back in the early seventies, when I first entered the medical arena of this city, I was told of a legend by my late friend, Dr. Charles Rawson, which he assured me contained more elements of truth than the ordinary legends—it ran as follows: That in the late sixties the members of the Polk County Medical Association, becoming generous and convivially inclined or, what might now be called in slang parlance, gay, tendered to the Medical Association a banquet. The viands and the wines that made up the *menu* of the banquet were of such a character as to have tickled the palate of the most thorough epicure. The banquet was eaten by the members of the State Association and paid for by the members of the Polk County Association. The next day condemnatory resolutions were introduced censuring the Polk County Medical Association for having frittered away the time of the State Association in so frivolous a manner.

In the early eighties I attended a meeting of the State Association at Dubuque, when some kindhearted druggist tendered the Association an excursion upon the river. A fine steamboat was provided, elegant viands, delightful wines and beautiful women went to make up an entertainment such as is rarely met with. I remember to this day the weight of some of the members that sat down upon me for having advocated accepting this kind invitation. In fact, I think it is partially responsible for having stunted my growth. This experience of mine, with the legend related to me by my friend, Dr. Rawson, having become property of the Polk County Medical Society, has deterred them from ever being rash enough to tender any kind of entertainment to the members of the Iowa State Medical Association, until this time our worthy President has arranged for a feast, such that I am sure will please each and every member of this association, in the shape of a surgical clinic to be held tomorrow morning at Cottage Hospital. Those of you who are acquainted with the skill of the operator will enjoy the anticipation of it, while all who witness it will enjoy the realization of it. Mr. President, I thank you and the Society for this kind invitation to deliver this impromptu address on behalf of the medical profession of our city, and I hope all of the members present from throughout the State will be with us two years hence.

On motion the reading of minutes of last meeting were dispensed with.

Admission of new members. The Committee on Arrangements announced many new members, both by invitation and as permanent members.

Dr. Hobby moved that the delegates of this Society to the American Medical Association be instructed to support the majority report on the revision of the Constitution of the American Medical Association as published in the Journal of the Association of April 21st, 1894. Referred to Committee on Ethics.

Moved by Dr. Ball that any vacancies there may be in the Committee on Ethics be filled by the President. So ordered.

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The President appointed to fill vacancies in Committee on Ethics Drs. McCarthy of Dubuque, and Conniff, of Sioux City.

Dr. Hobby moved that the Committee on Arrangements be instructed to report at the opening of each session only. Carried.

On motion the delivery of the President's Address was postponed to be read at the opening of the afternoon session.

Dr. Chase moved that the business under Sec. 8, Art. 1 of By-Laws be made a special order at the close of the forenoon session. So ordered.

On motion fraternal greetings were ordered sent to the state medical societies of Ohio, Pennsylvania, Indiana, Illinois and Missouri, now in session.

Dr. Emmert moved that immediately after adjournment each Congressional District meet and select a member of the Nominating Committee, to be reported immediately on convening after dinner. So ordered.

AFTERNOON SESSION.—2 P. M.

Society called to order by President Schooler.

Dr. Priestly read the names of parties desiring to become members of the Society and on motion they were elected.

Dr. Schooler delivered his address to the Society, as follows:

Dr. Hobby moved that the President's Address be referred to a special committee. So ordered. Drs. Hobby, Emmert and Ristine were appointed as such committee.

Members of Nominating Committee Selected were announced, as follows:

First District—T. J. Maxwell, Keokuk.
Second District—J. C. Shrader, Iowa City.
Third District—William Watson, Dubuque.
Fourth District—G. F. McDowell, Clear Lake.
Fifth District—G. R. Skinner, Cedar Rapids.
Sixth District—L. C. S. Turner, Colfax.
Seventh District—Lewis Schooler, Des Moines.
Eighth District—S. Bailey, Mt. Ayr.
Ninth District—J. M. Emmert, Atlantic.
Tenth District—H. G. Ristine, Ft. Dodge.
Eleventh District—R. E. Conniff, Sioux City.

The Section on Practice of Medicine taken up, C. E. Todd, Chairman being absent.

On motion the section was taken up by the Society.

Dr. D. L. Cole of Bussey, read a paper entitled "Carcinoma." Discussed by Drs. D. W. Finlayson, A. G. Field, Amos and Jepson. Closed by Dr. Cole. Paper referred.

Dr. Emmert moved that the Society now pass to the Surgical Section. Lost.

The section on Nervous Diseases was next taken up, and the Chairman being absent no report was read.

Dr. Frederic S. Thomas, Council Bluffs, read a paper entitled "Our Neurasthenic Patients." Discussed by Drs. McClure, Amos, C. F. Wahrer. Discussion closed by Dr. Thomas. Paper referred.

Dr. W. C. Pipino read a paper entitled "How Quack Doctors Obtain Certificates, which was discussed by quite a number of members.

Dr. Ball offered the following resolution:

"*Resolved:* That the Iowa State Medical Society hereby asserts its confidence in the Iowa State Board of Medical Examiners and wishes the Board to understand that this Society heartily sanctions every effort made by the Board to elevate the standard of medical teaching, and we pledge our support to the enactment of more stringent medical legislation," and moved the adoption of the same.

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An amendment to insert the word "qualification" instead of the word "teaching" in the resolution, was consented to. Lost.

Dr. Pipino moved that a committee of five be appointed by the President to draft a new law governing the practice of medicine and surgery in this state. Motion carried.

The following named gentlemen were appointed on the committee: Drs. W. C. Pipino, A. W. McClure, A. L. Wright, Ira Welch and W. D. Middleton.

EVENING SESSION.

Called to order by President Schooler.

Several delegates were elected to become members.

Dr. Hobby, of Committee on Ethics, made report, as follows:

REPORT OF COMMITTEE ON ETHICS.

So far as any ethical questions are involved in the revision of the Constitution of the American Medical Association, your committee believe the matter should be left for the determination of the Society as to the action desired of its representatives.

The more important matters pertaining to organization and sytematic work do not properly come before this committee for consideration. Your committee would, therefore, beg to refer the motion to instruct delegates, back to the Society for action and without recommendation.

C. M. HOBBY,
J. F. MCCARTHY,
J. M. EMMERT,
R. E. CONNIFF,
Committee on Ethics.

It was moved to amend the resolution offered by Dr. Hobby inserting the word minority instead of majority. Carried.

Resolution as amended also carried.

Report of Committee on Publication was received as follows.

To the Iowa State Medical Society:

Your Committee on Publication, to whom were referred the papers read before the Society at the Burlington meeting, May, 1893, beg leave to say, that they carefully performed the duty assigned them, and that the papers were published in *The Omaha Clinic*, as per contract made and in a most satisfactory manner.

DES MOINES, IA., May 16, 1894.

F. S. THOMAS, *Chairman.*

A vote of thanks was extended to the committee, and especially to Dr. F. S. Thomas, its efficient chairman.

Dr. Watson read report of Committee on Revision of Constitution and By-Laws, which, on motion, was adopted as submitted. The report is as follows:

MAJORITY REPORT ON THE CONSTITUTION AND BY-LAWS.

Articles I and II, no change.

Article III, Section 2. Strike out "and Faculties of Medical Colleges." Substitute three for five as ratio for delegates. Strike out "and every permanently organized hospital of twenty-five beds."

Sec. 6. Amend so as to read "In order to secure representation in the Iowa State Medical Society, all Auxiliary Societies must furnish the Secretary of this Society," etc.

We constitute Article IV as Section 1, and add as Section 2: No member of this Society shall be eligible to the office of Vice-President who has not been a member in good standing for four years and attended at least three annual meetings.

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No member shall be eligible to the office of President who has not been a member for the period of eight years and attended at least five annual meetings.

Amend Article X by striking out the words "upon taking his seat," and insert the words "after presenting his credentials."

Amend Article XI by striking out all after the word "satisfied" and add "and from the Committee on Ethics who shall attest the member has been guilty of no conduct such as might subject him to discipline, if charges were preferred against him." And strike out the last paragraph of Article XII.

Amend Article V of the By-Laws so as to read after the word "Society" "save such money as shall be needed by the Secretary to defray current expenses, which amount shall be approved by the President."

WILLIAM WATSON,
D. MACRAE,
Members of Committee.

SECOND DAY, THURSDAY, MAY 17TH.

MORNING SESSION.

Society called to order at 9.30 A. M. by President Schooler and opened without the usual preliminaries.

Dr. Thomas moved that the paper of Dr. Wicks be read by title and referred to Committee on Publication. Also a paper on "Mental Cramp" by G. H. Hill be read and referred in same manner.

A paper in Section on Practice, by Caleb Brown, "Anæmia of Children" was read by title and referred to Committee on Publication.

Communication from Committee on Publication was adopted, as follows:

To the Iowa State Medical Society:

We, your Committee on Publication, recommend accepting the following proposition from the publisher of *The Omaha Clinic*, viz: "To publish complete, by January 1st, 1895, the transactions, including papers read and referred to Committee on Publication, for the sum of two hundred and fifty dollars. Also any number of fifty or more volumes, bound uniform in size and form of 1892 and 1893, minutes in brevier type and scientific work in long primer at cost (estimated at seventy-five cents) also a copy of the *Clinic* to be sent to each member from July 1st, 1894, to July 1st, 1895, free; one hundred and fifty dollars to be paid by September, 1894, and one hundred dollars January 1st, 1895.

F. S. THOMAS,
Chairman.
C. S. CHASE,
W. R. SKINNER,
Committee on Publication.

On motion the paper of C. A. Leech was read by title and referred to the Committee on Publication.

Dr. P. J. Fullerton presented a paper entitled "The duty of the Physician to Public Health." Discussed by H. L. Getz, F. S. Thomas. Referred to Committee on Publication.

Telegrams, conveying reciprocal greetings from State Medical Societies of Pennsylvania, Missouri and Ohio, now in session, were read.

Dr. Woods Hutchinson read a paper entitled "The Physiology of Education." Discussed by Drs. Emmert, Hobby, McClure, Getz, Snooks, A. G. Field, Fairchild, Watson, Hatton, Smith, Sloan and Pinney. Dr. Hutchinson closed the discussion. Paper referred to Committee on Publication.

It was moved and seconded that the Committee on Publication be directed to request the daily papers to publish the paper of Dr. Hutchinson entire.

It was moved to amend by including the discussion on same.

On motion the whole matter was tabled.

Adjourned until 2 P. M.

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AFTERNOON SESSION.—2 P. M.

Society called to order by President.

Drs. Waples, of Dubuque and Sansom, of Tipton, made application for withdrawal. Referred to Committee on Ethics.

On motion the paper by Dr. H. A. Leipziger, Burlington, was read by title and referred to Committee on Publication.

By request of Secretary Chase, the Committee on Publication was authorized and directed to publish the Constitution and By-Laws in *The Omaha Clinic.*

Dr. T. J. Townsend, Chairman of the Section on Materia Medica and Therapeutics presented his report, which was referred without discussion.

Dr. G. W. Barr read a paper entitled "Basic Errors in Therapeutics." Referred to Committee on Publication.

Dr. Macrae read the following resolution and moved its adoption, which was seconded by Dr. Cokenower.

Dr. Chase moved that this matter be referred to Committee on Ethics now without discussion and proceed with the program, and that a special time be set at 4:30 P. M. for the committee to report. So referred.

The following is the resolution as read by Dr. Macrae.

"WHEREAS, The President of this Society publicly and emphatically represented that members of the Polk County Medical Society, himself included, daily violate the Code of Ethics of the American Medical Association by holding consultations with irregular and irresponsible practitioners of medicine, and likewise justified their acts as being agreeable to him and worthy of imitation by the profession.

Resolved, That we, the members of the Iowa State Medical Society, are deeply grieved at the humiliating spectacle of our retiring president promulgating sentiments which are utterly repugnant to the members of this Society and prejudicial to its interests, directly violating the principles which we feel it our duty to maintain."

SECTION ON SURGERY.

Dr. D. S. Fairchild, Chairman of the Section, presented his report, which was referred without discussion.

Dr. Maxwell, of Keokuk, read a paper entitled, "Trephining in Epilepsy." Discussed by Drs. Ruth and Snooks. Discussion closed by Drs. Fairchild and Maxwell.

Committee on Ethics here made a report on the matter of the charges preferred by the President, Dr. Schooler, against the members of the Polk County Medical Society and, upon motion, the recommendation of the committee was adopted, which is as follows:

"Your Committee on Ethics would report that the resolution of Dr. Macrae, referred to them, contains no definite, specific charges against any member of the State Medical Society, of the violation of the Code of Ethics of the American Medical Association, or the Constitution and By-Laws of the Iowa State Medical Society and that, therefore, under Article IX of the By-Laws of this Society the Committee on Ethics are not empowered to take action in the case. But your committee would recommend that the Polk County Medical Society be directed to examine into and investigate the charges made by Dr. L. Schooler against the members of the Polk County Medical Society previous to the next annual meeting of the Iowa State Medical Society.

C. M. HOBBY,
J. F. MCCARTHY,
J. M. EMMERT,
D. MACRAE,
R. E. CONNIFF.
Committee.

Dr. A. L. Wright, of Carroll, presented a paper entitled "Surgical Tuberculosis of the Kidneys." Discussion was postponed until after the reading of paper on and demonstration

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of the use of the Murphy button in rectal stricture. Demonstration made at the Veterinary Amphitheatre. Referred to Committee on Publication.

Society adjourned until 7:30 P. M.

EVENING SESSION.

Society called to order by the President at 7:30 P. M.

On motion the report of the Nominating Committee was received and adopted.

REPORT OF COMMITTEE ON NOMINATIONS.

Mr. President:—We, your Committee on Nominations beg leave to submit the following report:

President—A. L. Wright, Carroll.
First Vice-President—D. S. Fairchild, Clinton.
Second Vice-President—T. J. Maxwell, Keokuk.
Secretary—J. W. Cokenower, Des Moines.
Assistant Secretary—Dr. Sampson, Creston.
Treasurer—G. R. Skinner, Cedar Rapids.

COMMITTEES.

ETHICS.

Lewis Schooler, chairman, Des Moines; C. M. Hobby, Iowa City; J. R. Guthrie, Dubuque; P. M. Jewell, Ossian; H. B. Young, Burlington.

PUBLICATION.

F. S. Thomas, chairman, Council Bluffs; J. M. Knott, Sioux City; Woods Hutchinson, Des Moines.

ARRANGEMENTS.

H. E. W. Barnes, chairman, Creston; J. D. R. Reynolds, Creston; F. E. Sampson, Creston; J. P. Claybaugh, Creston; S. Bailey, Mt. Ayr.

LEGISLATION.

W. C. Pipino, chairman, Des Moines; A. W. McClure, Mt. Pleasant; A. L. Wright, Carroll; Ira Welch, Humboldt; W. D. Middleton, Davenport.

NECROLOGY.

First District—J. M. Ball, Keokuk.
Second District—E. F. Clapp, Iowa City.
Third District—C. S. Chase, Waterloo.
Fourth District—J. F. Cole, Oelwein.
Fifth District—J. S. Love, Springville.
Sixth District—J. R. Gorrell, Newton.
Seventh District—J. F. Kennedy, Des Moines.
Eighth District—T. P. Stanton, Chariton.
Ninth District—Rebecca Hanna, Red Oak.
Tenth District—O. E. Evans, Gowrie.
Eleventh District—W. H. Dewey, Moville.

Recommend Creston as next place of meeting.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

First District—Drs. Jenkins, Keokuk; Hughes, Keokuk; McClure, Mt. Pleasant; Snook; Fairfield.

Second District—Drs. Shrader, Iowa City; Farnsworth, Clinton; Fairchild, Clinton.

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Third District—Drs. Hill, Independence; Crouse, Waterloo; Chase, Waterloo; Watson Dubuque.

Fourth District—Drs. Berry, Clermont; Dodds, Waucoma; Saunders, Kensett.

Fifth District—Drs. Skinner, Cedar Rapids; McMorris, Belle Plaine; Dalby, Cedar Rapids; E. M. Clark, Getz, Marshalltown.

Sixth District—

Seventh District—A. G. Field, Des Moines; T. J. Caldwell, Adel; J. W. Cokenower, Des Moines; E. M. Gould Fosnes, Des Moines; D. C. Bice, De Soto; L. Schooler, T. J. Priestley and J. B. Hatton, Des Moines.

Eighth District—Drs. Stanton, Bailey, Mt. Ayr.

Ninth District—(No names.)

Tenth District—Drs. Burt, Lake City; Beam, Rolfe; Welch, Humboldt; Grayson, Ft. Dodge.

Eleventh District—Drs. Cushman, Spencer; Cleaves, Cherokee; Coad, Hull; McAllister, Spencer.

TRUSTEES.

Term expires 1896, O. E. Evans.

Term expires 1897, C. Snook, Fairfield; I. S. Bigelow, Dubuque.

Secretary was instructed to cast affirmative ballots for President and Vice Presidents.

Other nominees declared duly elected upon motion.

Dr. Getz moved that the vacancies in the list of delegates from the different districts be filled by the President—or rather to allow the President and Secretary to issue certificates showing the member entitled to a seat. Carried.

Also moved that the delegates elected to the American Medical Association be instructed to vote as a unit. Carried.

Dr. Fairchild moved that Marshalltown be substituted in the place of Creston.

Dr. Chase moved that the Society proceed to take an informal ballot. Carried.

It was moved that the informal ballot be declared formal. Motion lost.

Whereupon a formal ballot was taken, resulting in Creston receiving the majority of the votes cast, and was declared as the next place of meeting.

On motion Dr. Sampson, of Creston, was unanimously elected as Assistant Secretary.

Dr. Hutchinson here exhibited to the Society a case of arrested development, due, probably, to inherited syphilis.

The President appointed Special Committee on Finance, composed as follows: C. E. Stoner, Des Moines; D. Macrea, Council Bluffs; C. Snook, Fairfield.

Dr. F. S. Thomas presented the following charges, etc., against Dr. C. J. Lukens, of Oskaloosa:

To the Officers and Members of the Iowa State Medical Society:

The undersigned hereby charges C. J. Lukens, M. D., a member of this Society, with unprofessional conduct, viz: advertising in a pamphlet, The Local and Through Time Tables of Iowa Central Railway, of April, 1894 on page 6. Said advertisement contains a picture of building and among other things claims to be "the only private institute of the kind in the state." Also contains published references of eight persons, most of whom claim to have been blind or whose poor eyesight had been relieved by the superior skill of Dr. Lukens.

(A copy of circular enclosed and part of charges.)

Respectfully, F. S. THOMAS

Dr. J. W. Kime, of Fort Dodge, presented a paper entitled "Mastoid Disease in General Surgery". Discussed by Drs. Amos, Maxwell, Ball, Hazen, Thomas, Shore, Finlayson, and Pipino. Closed by Dr. Kimes. Referred to Committee on Publication.

Dr. Finlayson, Des Moines, read a paper entitled "Ulceration of the Rectum, Caused by Hypertrophy of the Prostate Gland". Referred to Committee on Publication.

Dr. J. T. Priestly presented a paper entitled "Extra Genital Chancre". Discussed by Dr. Dorsey. Referred to Committee on Publication.

Adjourned to 9:30 a. m.

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THIRD DAY, FRIDAY, MAY 18TH.

MORNING SESSION.

Society called to order by President Schooler.

The time now having arrived for introduction into office of the new President, Dr. Schooler introduced him as follows:

Gentlemen of the Society:

I take pleasure this morning in introducing to you a gentlemen who is to be your next President, whom you all know very well, and all know that he should have been placed in that position before. This was a good while ago. He has been a member a long time, has been an earnest, competent, intelligent worker in the Society, and I am sure that his administration will be entirely successful, and I am further assured of the fact that each and all of us will take pleasure in contributing our mite toward that end. I know, from my own experience, that it will be fully appreciated by the incoming President, and that we will all feel better for having contributed to the success of his administration. I now have the pleasure of introducing to you President-elect, Dr. A. L. Wright, of Carroll, Iowa.

On taking the chair, Dr. Wright said:

Gentlemen:

I have no speech prepared to thank you for this honor, but I wish to assure you that it is duly appreciated and I thank you. I will not detain you, but we will proceed with the programme.

The section on Obstetrics and Gynæcology was here taken up.

Dr. J. D. McCleary, of Indianola, presented his report, which was referred to the Committee on Publication without discussion.

Dr. W. F. Porterfield's paper, entitled "Some Remarks on the Management of Abortion," was read by Dr. Emmert. Discussed by Drs. Schooler, Jackson, Priestly. Discussion closed by Dr. Emmert. Referred to Committee on Publication.

Dr. Frances S. Carrothers, of Des Moines, read a paper entitled "Hystero-Neuroses.' Referred to Committee on Publication.

Dr. J. W. Cokenower read a paper entitled "Can Maternal Impressions Produce Malformities, Deformities and Birthmarks." Discussed by Drs. Barnes, Emery, Emmert, Hatton and others. Referred to Committee on Publication.

Dr. H. E. W. Barnes read a paper entitled "A Case in Practice." Discussed by Dr. Schooler. Referred to Committee on Publication.

Committee on Finance made report, which, on motion, was accepted and placed on file.

REPORT OF FINANCE COMMITTEE.

We, your Finance Committee, beg leave to report that we have examined the accounts and vouchers of the Secretary and Treasurer and the Committee on Arrangements and find them correct and reccommend that the same be allowed as reported.

C. E. STONER,
C. SNOOK,
D. MACRAE,
Committee.

Secretary Dr. C. S. Chase, of Waterloo, made his report for the year just ending, which had been passed upon by the Finance Committee and unanimonsly adopted by the Society. His report is as follows:

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EXPENSE ACCOUNT.

Iowa State Medical Society in account with C. S. Chase, Secretary, 1893-1894:

Postage	$35.47
Printing—Harsman & Sons, Waterloo	40.80
Expressage	1.55
Transscribing minutes in permanent record book	3.50
Stationery	1.90
For page at annual meeting at Des Moines	50
	$83.72

EXPENSE ACCOUNT OF COMMITTEE ON ARRANGEMENTS.

F. M. Van Pelt, stenographer	$25.00
Three hundred working programmes—P. C. Kenyon	5.25
Tables—Harbach	9.00
Telegrams to other Associations	4.03
Ice water	1.00
J. W. Cokenower, stamps, stationery, etc	10.15
	$54.43

Dr. G. R. Skinner, of Cedar Rapids, the Society's faithful and long-tried Treasurer, made his report, prefacing it with the remarks that a few years ago he felt very much discouraged because the Society's treasury was greatly diminishing each year, but this year he was gratified to say there was a very agreeable change and that, after paying all bills due from the Society to date, there would be a balance in the treasury of about $600.00. The Treasurer then read his report, which had been passed upon by the Finance Committee and was unanimously adopted by the Society.

TREASURER'S REPORT.

G. R. Skinner, Treasurer, in account with the Iowa State Medical Society.

To Cash on hand as per report, 1893	$ 376.75
Cash received during the year	343.00
Cash received from members during session 1894	322.00
Cash received from 54 delegates	162.00
Cash received from Dr. Young, Committee on Arrangements 1893	18.45
	$1,222.20

Cr.

1893, Aug.	31.	By Secretary's order 191	$ 100.00
1894, Jan.	8.	" " 192	100.00
May	18.	" " 193	100.00
"	18.	" " 194	150.00
"	18.	" " 195	83.42
"	18.	" " 196	18.25
"	18.	" " 197	54.53
		Cash on hand	616.00
			$1,222.20

G. R. SKINNER,
Treasurer.

DES MOINES, IOWA, May 18, 1894.

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REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

Your committee to whom was referred the President's address desire to express their approval of the sentiments contained therein so far as they pertain to matters concerning the relation of the profession to the public.

In regard to the recommendation to permanently locate the place of meeting of the State Medical Society, they believe that, at present, the interests of the Society will be better served by holding alternate meetings at different parts of the State, as heretofore practiced.

C. M. HOBBY,
J. M. EMMERT,
Committee.

Committee on Necrology also made report at this time which, on motion, was referred to the Committee on Publication.

NECROLOGY.

Reports were made from the First, Seventh, Eighth, Ninth, Tenth and Eleventh Districts, reporting death in First, Seventh and Tenth as follows: Dr. Thomas Sweter, Salem, Henry Co., Iowa, Robert Stewart McNutt, A. M., M. D., Des Moines, and John R, Kinney, A. M., M. D., Humboldt, Iowa.

Dr. F. B. Dorsey, of Keokuk, read a paper entitled "Obstetric Forceps and Injuries of the Pelvic Floor." Discussed by Drs. Emmert, Porterfield, Johnson, Emery, Jackson, Schooler, and Hatton.

Society adjourned until 2 p. m.

AFTERNOON SESSION.

Society called to order by the President at 2 p. m.

Dr. Dorsey closed the discussion on his paper. Referred to Committee on Publication.

Dr. Jackson, of Pleasantville, presented a paper entitled "Anæsthetics in Labor." Discussed by Drs. Dorsey, Schrader, Priestly, Hatton, Porterfield and Emery. Discussion closed by Dr. Jackson. Referred to Committee on Publication.

On motion by Dr. Schooler, the paper of Judge C. A. Bishop, entitled "Medical Expert Witnesses," was read by title and referred to Committee on Publication.

Dr. Schrader, of Iowa City, read a paper entitled "On Some Uterine Tumors and Their Management." Referred to Committee on Publication.

Dr. Pipino, of Des Moines, read a paper entitled "A Novel Method of Treating Nasal Catarrh." Referred to Committee on Publication.

There being no further business the Society adjourned *sine die* at 3:15 p. m.

J. W. COKENOWER,
Secretary.

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PART II.

PRESIDENT'S ADDRESS

AND

REPORTS OF SECTIONS.

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PRESIDENT'S ADDRESS.

L. SCHOOLER, M. D., DES MOINES, IOWA.

Ladies and Gentlemen of the Iowa State Medical Society:

We meet again in annual session for the forty-third time in the history of the Society. How changed are the conditions and how different the personnel, there are only a few who can tell or who are entitled to make the observation.

But as our beautiful State has kept pace with the progress of the age, in all that tends to the enlightenment and welfare of its inhabitants, I run no risk of refutation in declaring, we, as medical men, occupy as advanced ground as any of the brethern of our sister states. Much of this is due to individual exertion, for without this all must fail. But to these meetings and others of similar character we owe much. It is here we meet and become acquainted with each other; it is here that we impart and receive instructive ideas; it is here that we learn to esteem our own and our neighbor's ability. When we have done this we cannot but have broader views of medicine and of humanity in general and a greater respect for our professional brother in particular.

Without these acquaintances and these associations and friendships, professional life is a barren waste, and the medical man who condemns them has begun to decay. The esteem of the profession is to the progressive physician the stimulus upon which he thrives; without it he sees no glory in the profession; to him its beauty is a hidden subject and his function is performed as a machine. The value of society work has increased greatly within the last few years. The quality of the papers read before the different societies is of a higher character and leaves its impress upon the permanent literature and thought of the profession. The papers themselves are frequently the least important of the society proceedings, because they embody only the views of the writer; but the discussions, which leave out all historical data, are the most practical and hence the most valuable, and the paper that occupies sufficiently advanced ground to elicit a comparison of views or emphasizes ancient beliefs forcibly enough to bring most of the members to their feet, serves best the interests of the society. Oratory is not a necessary qualification of a medical man, but the ability to definitely express one's views is readily acquired in these discussions—in this direction largely lies the value of society work. The benefit of a society does not always consist in numbers but in the earnestness of its membership—and their desires to benefit the profession and their patients and through them benefit, as they will, themselves.

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Ambition is as laudable in a medical man as in any other, but care should be observed in the method of its attainment, and all elevation of individuals should come on account of the good he has done the profession. The society that is and always has been a stranger to political methods in the selection of its officers and in the conduct of its affairs and the object of whose members is to make it a working society cannot fail to attract, and will secure, all who are calculated to develop the best resources of its members. The advancement in the medical education, length of term and clinical study is gratifying in the extreme. Whether or not this has been the result of the demands of the profession or by the requirements of the state boards is of little consequence as long as it is an accomplished fact. The step has been taken and the line of march is onward and upward.

My own opinion is that we cannot lay claims to more than simple agitation as long as we are careless or negligent in ascertaining the qualifications of those whom we admit into our offices as students. Here it is that reform is needed and here it is that reform should begin.

The embryo medical student should not be discouraged but should be carefully guided during the time that he is laying the foundations upon which he intends to build for life. An acquaintance with literature, science and art is imperative, not only for the mental training but that he may not bring discredit upon the profession should he be known in another role. With the facilities for the acquirement of an education that exist in almost every portion of our country at the present day, we fall short of our duty to the profession and to those who seek to enter it if we do not insist upon something more and above the requirements of our best medical colleges, before we consent to become preceptor to those whose desire it is to enter what is termed one of the learned professions. In this way, and in this way only, can we make it truly a learned profession.

The contribution from our ranks to literature, to science and to art, have been numerous and creditable, and with the enlarged opportunities which we possess we are, no doubt, destined to occupy a more exalted plane in the future. Many of our remedies and discoveries have been fortunate accidents, and much of our practice has been empirical, many of our theories have been fanciful, but with all our gropings after truth we have always looked forward to learning as our only aid in placing our profession above that of all others, and as we progress in this direction the nearer we approach a scientific basis in all that we practice and profess.

The adoption of the graded course was an advance of great importance, it provides for a foundation without an admixture of the finishing touches—but like everything else in medicine it is an auxiliary and not a specific. To-day there are persons demanding optional courses and the abolishment of the lecture, while others contend for a course of greater length and increased laboratory facilities. Both have advantages and failings; in the former the personality of the lecturer is lost, and the experience of the teacher is subordinate to the views of the author; a charge which should be made only when we have such a series of text books as would receive something near the unanimous endorsement of the teachers—an impossibility, certainly, in the present condition of medical

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literature. The second undertakes to supply a deficiency in the modern student that could be better corrected by exacting greater qualifications for the entrance upon a medical career. And here I will instance a single defect which will serve as an example for others which you can readily supply. Chemistry and chemical laboratories are specially mentioned in all the announcements, and many hours and weeks are spent upon the rudiments of a science which the student should be master of before he undertakes to familiarize himself with the different subjects treated of under the head of materia medica and therapeutics. Physiological chemistry alone should have a place in the medical laboratory; properly conducted demonstrations in this department would be all sufficient and less likely to weary rather than instruct the average student. Four years of lecture is the coming ordeal, but far better would it be to have this extra year spent in a good scientific school with special courses for those who intend studying medicine.

Many view with alarm the innumerable accessions to our ranks, overcrowding being already observable, and lengthening of the term and more rigid requirements are advocated as a means of relief. That it will reduce the number of students in proportion to the inhabitants I think is more than probable. In these days of haste and avarice five years of technical study will undoubtedly prove an unsurpassable barrier to many ambitious students.

All schools are now required to embrace in their course of study some things that were formally ignored by a certain class of practitioners. How thoroughly pathology and bacteriology is taught by those who deem them non essential, can be conjectured. The regular profession does now and always has stood for something better than empiricism. It stands for something better than the fathers of medicine ever attained in the last century; it will in the next century stand for something better than it has in this. It stands for the elevation of science, for the application of scientific principles in therapeutics, medical and surgical; and if for this, it must stand for a higher and better preliminary education for those who seek to enter our ranks.

Shall the code be amended? We are asked for an expression of opinion upon the subject at this meeting, and our delegates to the American Medical Association will be expected to vote in accordance with the views here expressed: I trust the matter will be discussed calmly and in a thoughtful manner, each having in view the interests of the profession.

The committee that has been entrusted with this matter is composed of gentlemen who have the confidence of the Society, each of them have been the recipients of its highest honors. I have no intimation regarding their recommendations, but I feel assured that whatever they are, they are the result of careful and considerate thought. In this connection it may be well to state that there are according to the most reliable estimates, about one hundred thousand physicians in the United States; of this number less than five thousand belong to the American Medical Association. There are perhaps double this number who, at some time, but who are not now members of the association. These have at one time been subscribers to this document. Many of them believe that the instrument

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is as near perfect as possible and that its influence is always for good, that it is necessary to preserve the standing and dignity of the profession.

There are others who believe that progress is hindered by the restraints sought to be imposed by its teaching; that it bears the same relation to the profession that the constitution of the United States does to the government, or that certain church creeds do to the religious thought of to-day. That as human knowledge increases, it outgrows all creeds, and dogmas, and that rules for the guidance of all progressive bodies need frequent amendments, or the adoption of new ones in their stead.

Upon this question I have a decided opinion, but should I express it I should feel called upon to give at length my reasons therefor, which would take too much of your time, I therefor content myself with calling your attention to it in as brief a manner as possible. There being, perhaps, nothing of greater importance to come before us at this meeting.

The advisability of fixed places of meeting is, I think, clearly apparent to the majority of our members; individual jealousies have heretofore defeated all attempts in that direction. I do not advocate it in the interests of any place, or for the benefit of any except the general membership of the Society. I believe that so far as the profession of this city is concerned, that we prefer to attend the meetings away from here where we are out of reach and can give our whole time to the meetings. But local interests should not be allowed to interfere with matters of this kind.

I am not prompted by local pride when I state my convictions upon this question, for I would be quite as willing to have it located elsewhere, provided the facilities of travel and accommodations are equal. On account of my location I am loth to touch upon this point, but after careful observation for a number of years I am fully convinced that the best interests of the Society demand that we select a permanent place for our meeting in the future.

During the year we have had numerous local but no general epidemics. The promptness that has characterized the action of local boards in their dealings with these outbreaks is worthy of special mention. The spread of such dread diseases as diphtheria, scarlatina and smallpox, has been greatly curtailed by the efficient measures adopted by our local health officers. This is more clearly apparent when we remember that these physicians are the most poorly rewarded of any of our public servants. While we frequently deprecate the political methods resorted to in connection with these positions, the fact remains that most of them are ably filled and that the work is conscientiously performed and that the services rendered are out of all proportion to the compensation.

While Chicago is sorely afflicted by smallpox and apparently unable to prevent its spread or stamp out the disease, it is only to be expected on account of the free intercourse of our people with those of that great commercial center that we should have the disease brought into our midst since December 1, 1893. The disease has made its appearance, as shown by the official records of the State Board of Health which have been kindly furnished me by its efficient secretary, Dr. J. F. Kennedy, and on account of their reliability they are here inserted:

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FROM MAY 1, 1893, TO MAY 1, 1894.

Burlington, one case; recovered.
Marion, one case; recovered.
Chelsea, one case; recovered.
Fort Madison, one case; died.
Salt Creek Township, Tama County, five cases; three deaths.
Marengo, one case; recovered.
Carson, one case; recovered.
Clinton, six cases; recovered.
Pacific Junction, three cases; one death.
Council Bluffs, seven cases; two deaths.
New Hampton, eight cases; four deaths.
Keokuk, one case; recovered.
Tama, one case; recovered.
Total cases, thirty-seven; deaths, eleven.

The efficiency of the State Board of Health has been questioned by a few individuals and a portion of the press. This can only come from persons who are uninformed in regard to the laws under which the Board was created. The limited authority given by the law necessarily hampers them in many things connected with the public health, and so far each succeeding Legislature has refused to enlarge the scope of their usefulness, so that at present the Board is constituted a superintendent of local boards.

I am satisfied that each member of the Board as well as the other officers would welcome a change compelling them to discharge specific duties, and in the case of severe epidemics or disasters, like that of Grinnell or Pomeroy, they should have both authority and money to meet the emergencies.

While our profession and our people are always willing to do all they can in these cases, they work at a disadvantage for lack of organization, consequently much suffering and an occasional death must be endured for lack of foresight upon the part of our law makers; a strong professional sentiment, properly directed, will eventually produce the desired result

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SECTION OF OBSTETRICS AND GYNECOLOGY.

REPORT ON OBSTETRICS AND GYNECOLOGY.

BY J. D. M'CLEARY, M. D., INDIANOLA, IOWA.

I do not attempt in this paper to give even an outline of the work in obstetrics and gynecology for the past year. The subject is too vast and the details too voluminous. I simply offer a few desultory thoughts connected with the subject.

The activity displayed in all branches of medical science which has marked recent years, has continued with unabated vigor in the departments of obstetrics and gynecology during the year now closing. While no new or specially brilliant operations have been brought forward, or salient points developed, substantial progress in details has been made, so that the workers in these departments are now better equipped in knowledge and facilities for the work than they have been in any former period. Good work has been done by many operators scattered over the world, while the work of the masters has never been excelled in results in the history of the science. And yet, we are probably only upon the threshold of greater triumphs to be achieved in this prolific field. If the science of medicine and surgery has been revolutionized in the nineteenth century, what may we expect in the twentieth?

The discovery of antisepsis by Lister was the starting point for the beneficent results in modern gynecology, and though it is now understood that antisepsis is subordinate to asepsis, still the profession is under lasting obligation to Joseph Lister for this discovery. It has made safe the invasion of regions hitherto regarded as sacred from the scalpel of the surgeon, and rendered possible the cure of conditions heretofore amenable only to palliative treatment. In obstetric practice, we are not now appalled by frightful epidemics of puerperal fever as was the case in former years. This disease has practically been banished from lying-in hospitals, and if perchance it should occur it would probably be easily traceable to neglect of antiseptic precautions. In country practice isolated cases still happen occasionally from causes possibly beyond the control of the medical attendant, for there is still a great deal of ignorance among midwives, and a certain class of doctors with whom country places are afflicted. The days of pulling off of the limbs and heads of infants and of avoidable lacerations of the mother are not over yet, even in favored Iowa; but the physician of to-day would be exceedingly culpable if he permitted an epidemic of puerperal fever to result from his carelessness, or should be himself the medium of contagion.

A great deal has been written of late of the old Sigaultian operation

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of symphyseotomy, and its substitution for the Cæsarean section, and craniotomy, in given cases. No doubt cases occur where these operations are necessary and justifiable, but the extreme rarity of the conditions demanding them, places them in the category of surgical curiosities, affording only a historic and scientific interest to the ordinary practitioner. While I do not know that these operations have not been done, I do not recall an instance of symphyseotomy or Cæsarean section in Iowa, and but few of craniotomy.

The use of anesthetics in labor is still under discussion, and its proper limits are not yet fixed. All agree that in abnormal and complicated labors chloroform may be, and often is indispensable. It is only as to its use in normal labor that debate arises. Here, it seems to me, that the old adage, "Meddlesome midwifery is bad," applies forcibly. For, beside the danger to life from the use of so potent an agent, it retards labor, predisposes to post-partum hemorrhage, prolongs convalescence, and may lay the foundation for nervous aberrations, which harass and annoy the patient for weeks or months following. This applies especially to normal labor in primiparæ, where the least interference with the natural forces is the best management.

Perineal lacerations, if slight, as they usually are, should be repaired immediately. If this is done at once before the parts have reacted from the obtunding influence of pressure no anesthetic is needed, and if catgut is used for the sutures no further attention is necessary on that account.

The use of the forceps in labor, and especially to shorten the second stage, is now resorted to much oftener than formerly, and with proper care in the adjustment and use of the instrument, the practice is to be commended. The danger to mother or child is not increased by the judicious use of forceps, while on the other hand, failure or delay in the use of the instrument may be productive of great harm to both. In primiparæ due caution should be used to not hurry the delivery at the risk of great injury to the soft parts. Time should be given for gradual dilatation, but in multiparæ, as soon as the first stage of labor is completed, the application of the forceps is in order, and the labor may be speedily terminated, with perfect safety and a minimun of suffering. The forceps may also be often used to great advantage in delivering the after coming head in footling and breech presentations. I suppose every physician of experience in obstetric practice can recall cases where he was unable, notwithstanding his best efforts with the unaided hand to release the head in time to save the life of the child. In such cases, with an assistant to support the body of the child, the forceps may be applied to the head, delivery readily effected and the life of the child saved.

The advancement in gynecology in the closing quarter century is wonderful. The history of the groping of Sims and Emmett and other pioneers in this work reads like a fairy tale. They marked the way so plainly that fools "need not err therein." Worthy successors have carried on the work, till in the broad light of this day there is very little need of or excuse for bungling or even for amateur or experimental work. But here, as elsewhere, "fools rush in where angels fear to tread," zeal outstrips knowledge, and as a result, we have ovaries removed that are not

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diseased, and pus tubes excised that contain no pus. Laparotomy has been done for neuralgia with no relief of the pain, and an abdominal incision has revealed a fetus in utero, where an ovarian tumor had been diagnosed. Yet, after all, there is no work in any branch of surgical art that has accomplished so much for the relief of human suffering as in that of gynecology. Thousands of women have been relieved of pain, their lives prolonged, and their health restored by the skillful and timely application of the surgeon's knife, whose mothers and sisters of a few years ago, with the same or similar diseases, were relegated to the ranks of the incurable and the hopeless.

In this day of multiplied medical societies and medical colleges without number, with clinics supplied with material illustrating every phase of disease, there is little excuse for bad work on the part of those who attempt gynecological surgery. The man who adopts the specialty of gynecology, can so fit himself as to begin where the pioneers left off, and escaping the amateur and experimental stages, occupy at once the position of a thoroughly equipped and skilled worker.

In the good time coming when education shall have made such further advancement, that every man will be able to diagnosticate his own limitations, when the amateur and the incompetent shall be eliminated from the ranks, when the surgeon shall be able, at all times, to command for his patients accommodations equal to the hospital and trained nursing, then the gynecological millennium will be near at hand.

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HYSTERO-NEUROSES.

BY MISS FRANCES S. CAROTHERS, A. M. M. D., DES MOINES, IOWA.

The recognition of the important part reflexes of a pelvic origin play in the diseases of women marks an era in their treatment. When we have learned what serious disturbances may come to a person from eye strain, where, to a casual observer, there is no defect of vision, we can appreciate more clearly what distress a nerve strain from another source may produce. From the pain in the head when the stomach refuses to digest the food to those annoying and alarming heart symptoms due to a similar cause, we can see how intricate the nerve connections between various organs, and how essential it is that each separate organ does its work well and methodically in order to preserve an equilibrium in the physical economy.

In some cases the hystero-neuroses are ones that we meet frequently, while others are very obscure and require a close examination to be able to differentiate the real from the reflex. We are all familiar with the common symptoms of the well-known pain in the left side, the *globus hystericus*, the nausea and vomiting with its accompanying indigestion, the pain and pressure in the top of the head, interference in vision, insomnia, spasms, syncope and hysteria, depending upon some derangement of the generative organs as first cause.

Aside from the mere mention of these common symptoms which one hears of in the lecture room or runs across occasionally in reading, very little space has been given to the further consideration of these interesting neuroses until quite recently. Dr. George H. Engleman, of St. Louis, has an instructive article on Hystero-Neuroses in Mann's System of Gynæcology, which, so far as I am informed, is the most comprehensive that has yet been written. We find that the head, eye, lungs, stomach, skin, even circulation, do not escape these neuroses, yet it does not follow that all the ills a woman is heir to come to her through the reproductive organs, but when you have had a case of persistent pain in the stomach, or head, or foot, that has withstood for months all medication, until some one cures an existing displacement of the uterus, when the pain vanishes as if by magic, or a spasmodic cough or hiccough that yielded only to the straightening of a flexion, you begin to think there may be other causes for well known symptoms that must be taken into consideration.

Anæmia, or any disease producing general debility, that weakens the muscular system affects those of the pelvis as well and allows these organs to drag induces a train of neuroses entirely out of proportion to the gravity of the lesion.

In my experience, the neuroses produced by this nerve and muscle strain from simple muscular weakness manifests itself in the head in a

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degree entirely out of proportion to the cause. To illustrate: A young lady, a student, kept up her class work, and for a time took care of a sister suffering from a mild attack of typhoid fever, and became herself almost ill from the same disease. After a time she experienced sensations of numbness in the head, which recurred to such a degree that she became alarmed. Consulting a physician he prescribed a tonic, but gave no reassuring diagnosis. On leaving school, the head symptoms returned in an exaggerated form. Any extra exertion, or being on the feet for a time, brought on the numbness and a sense of stricture about the head as though it were being held in a vice, with occasionally a stunned sensation as if some strong hand had dealt a blow at the base of the brain.

Occasionally the numbness passed down on the left side of the face, neck and even shoulders and back. On lying down the feeling would pass off in pain, intense at first, then gradually ceasing after hours of suffering. This condition could only be avoided by lying down, so naturally the patient spent her time on a couch. There was no discoverable disease in any organ, even menstruation was regular and comparatively painless. These symptoms persisted for two years when, after having gone through all the regular lines of treatment for liver, kidneys and spine, under the care of several different physicians, she herself suggested the cause might be uterine. An examination showed anteflexion with prolapse, but no tenderness. A course of treatment directed toward relieving these, combined with nux vomica and iron internally, restored her to health in time.

Another case similar to this was that of a school teacher, whose mother and two sisters died of tuberculosis, and father in an insane asylum. She was of a very nervous organization and had a morbid fear of insanity. She had always been troubled with constipation, dysmenorrhœa, and more recently with irritable bladder. Later her head began to demand attention from an increasing sense of pressure and pain, particularly at the base of the brain. She commenced treatment at once for this trouble, but as her circumstances were such that she was compelled to keep at work, which she did by making the hours in the school room the one effort of the day, she received little benefit. She consulted some of the best physicians in Chicago, was treated for dysmenorrhœa and nervousness without relief. She finally spent six months in a hospital under homeopathic care, where she received in addition baths, massage and electricity. She was dismissed with the encouragement that she had a beginning brain trouble and would probably follow her father. It was after this I saw her. She was well nourished and had a good color, though she slept badly and suffered very much with her head. She gave up all extra reading or study because it increased the distress; took what out-door exercise she was able, and was trying hard to make up her mind to the inevitable. From my other experience, the thought occurred to me that a similar cause existed. I had great difficulty, however, in securing an examination, for her experience in local treatment with its accompanying dilatation and strong applications had never been anything but painful, and then she felt sure the uterine trouble was entirely separate from that of the head, because she had been told so repeatedly. I found a very sensitive vagina with a lapsed and anteflexed uterus, which I replaced

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with difficulty, using a wool tampon. Two days later she returned, asking that I introduce another tampon, as she had been free from pain within an hour after placing the first. She had gone out riding and walking—had not felt so well in months. That morning she had run down stairs jumping off the last step, when the tampon became displaced, and the pain returned immediately. Six months later, she wrote me that the treatment kept her quite comfortable, and she was sure that my diagnosis was correct.

Last year I had a young woman come to me for electrical treatment for chorea, who had been under several physicians' care for six months. The first appearance of the chorea was at the menstrual epoch—and continued only a few days. It increased in severity and duration each month, until I saw her—when she was shaking all the time, except at night, and could scarcely retain her seat in the chair, her head, arms, legs, in constant motion. From the fact that the menses and chorea were concomitant, I looked for uterine or ovarian causation, also remembering that the well known remedies for the disease had failed in this case. I only found a retroverted uterus. Replacing it, I passed a galvanic current of 5-10 milliamperes through the uterus and lower spine. She grew quieter even while on the chair. The chorea ceased after the second treatment, but recurred at the following menstruation in lighter form and ceased to appear even at that time after three months. That was last June—I have seen her in all about four times since, but not later than December. The chorea would return, after some heavy work or a long ride or walk, and I always found the uterus retroverted again; replacing it, the shaking would cease. I should also add that I used Blaud's pills as an adjuvant.

The last case which I shall report is one of great interest to me because of the study I put upon it and the disappointment of treatment.

In May, of 1893, I was sent to the patient through the kindness of Dr. Priestly, for the purpose of giving galvanic treatment. I found the patient an unmarried lady of 43, who had taught for years; had always been well—with the exception of asthma recurring in a severe form each August for a period of years. Nine months previously to the time I saw her, on the night of the 13th day of September, 1892, during a severe paroxysm of coughing, her whole left side was suddenly stricken with complete loss of sensation, motion almost *nil*, including the left side of face and neck. Both she and her sister, who is an observing woman, assured me there was no loss of consciousness. Her speech was thick for several days following, and deglutition was also difficult for a time. The physician in attendance pronounced it a case of cerebral apoplexy, and treated her for fever for a few days. She said the sensation she had was that of being joined to a dead body, from which she could not free herself. This condition continued for ten days when the anesthesia gave place to hyperesthesia not limited to any particular zone of the body, but taking in large areas. Sometimes it would not be very pronounced, and then again the whole left half of the body would be so sensitive that even the weight of the clothing could not be borne. An intense burning accompanied the hyperesthesia with exacerbations, at times unbearable. The pain in the left shoulder, arm and intercostal space was most severe. The left breast

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was extremely tender, painful and burned so that it was protected from the clothing, while no one could touch it but herself—unless it was done in a most careful way. It looked perfectly normal, was not enlarged, soft and natural to touch, but discharged a thin watery fluid—only a drop or two at a time. There was also a peculiar drawing or pulling sensation in this side, which occasionally extended up into the face and neck. This she expressed as pulling up or crowding. During the nine months she had improved in strength somewhat, was able to walk about the room with the aid of cane, and, when the paroxysms of pain were not on, could sit or read a little. She had also, during this time, faithfully followed three courses of treatment. I treated her with galvanism daily for a month, using a 20-celled Mackintosh. There was no wasting of the muscles. She was thin, but generally so. The reaction to the current was normal—could take the full strength of the battery easily. The electrodes were placed, one on the breast, the other on the spine and moved down. There was no visible effect from the treatment further than to give her a better night's rest perhaps, for she was often compelled to sit up from 3 o'clock on because lying, as she did, on her right side caused a severe pain in that hip. I tried to encourage her to lie upon the left side, but she said the flesh felt so crushed and sore whenever she attempted it, that she could not bear the thought.

On the supposition that there was a clot somewhere to be absorbed, she was at the same time put upon increasing doses of iodide of potassium. This reduced her flesh and strength so rapidly that we were compelled to call a halt. During the time I saw her daily, I had an excellent opportunity to study the case, and it was with persistence that I got so complete a history. She had gone over it so often that—unlike most invalids—she curtailed it as much as possible, giving only the urgent symptoms. I found that she had had, for weeks at a time, a lump in her throat that she could in no way get rid of, either by coughing, swallowing or medication; that her symptoms were all exaggerated during the menses. She had no rise of temperature, pulse about ninety, appetite and digestion fair—constipated.

While I in no way felt certain that it was a case of hystero-neurosis, I was sure it was neither cerebral nor spinal apoplexy. She did not object to an examination, but had been assured so often that the pelvic organs were sound that she thought it useless. I found a large flabby-walled vagina, and an enlarged uterus completely retroverted. The reposition of the organ did not bring the delightful change that I had anticipated. She was put on a tonic of iron and nux vomica and improved a little. She even said she could walk across the room without the disagreeable dragging sensation. I went away at this time, but left a soft rubber pessary in place. Dr. Priestly saw her once while I was away and removed the support. At that time he found the organ in place, but a small growth to the right of it. She went to Dakota in July and continued to improve, until the asthma came on again, when she was very ill.

This case, so far, was reported before the Polk County Medical Association. I was not certain that I should see her again.

In December, after her return, I took charge of the case once more

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and continued to see her twice a week for three months. I found the growth to the right of the uterus quite pronounced, while the organ itself seemed unable to preserve an upright position—the treatments seemed to give relief in this way. The pain almost entirely left the side and breast and settled in the right iliac region; there was more sensitiveness in the pelvis—the uterus was still large and dragged. In March she took cold and had a very severe attack of neuralgia—the pain returning to the old spot in the left side and breast, the latter being so sensitive that even an ether spray which I used for the local effect was too harsh to be borne by the patient. I had previously used belladonna in the form of a plaster, fluid extract of phytolacca, which seemed to give some relief, also camphor and cold compresses.

Internally, she took Fellow's hypophosphites and compound sumbul pill. For the pain, phenacetine, acitanilid with citrate caffein-codeia, as she did not bear morphine well, and chlor-anodyne. So far no treatment has materially benefitted her, and she is naturally very much discouraged. The growth in the pelvis is closely connected with the uterus and seemed to me to be a subserous fibroid. It increased in size during my observations.

I shall be glad if the members of the Society will indulge in a free discussion of this case, for I presume many of you with years of experience will be able to add much light on the subject.

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A PSEUDO-LAPAROTOMY AND ITS RESULT.

BY H. A. LEIPZIGER, M. D., BURLINGTON, IOWA.

In drawing attention to the following report, I desire to disavow at the outset any intention of suggesting a new line of treatment or opposing any approved treatment now in vogue.

The case reported is an interesting one from a physical as well as a psychical standpoint. It shows to what extent the moral effect of an operation may influence the result of treatment. Whether a repetition of the procedure adopted in this case would be advisable, or even justifiable in any other case, I am not prepared to maintain; but as we build up sound principles of practice mainly from accumulation of facts, every additional fact bearing upon a certain line of treatment must be of advantage.

This is the case of a young woman who suffered from severe dysmenorrhœa from the time menstruation was established; who was married in the course of time, bore children, and continued to suffer from dysmenorrhœa and an additional trouble, viz: serious vaginismus. A year or more was spent with various methods of treatment, with progressive increase of the trouble. In the course of several consultations, the term operative measures was naturally alluded to, and some friend or neighbor had been relieved of similar difficulties by a removal of the adnexa. It may be that these two circumstances aroused in the patient a more or less hysterical desire to be operated upon, yet there was never a pronounced request by the patient for anything of this kind, nor does the history as given below show a hysterical condition.

An operation having been repeatedly proposed by consultants as the only remedial agent left, I decided to test the value of the moral effect of anæsthesia and the usual after treatment as applied to abdominal sections. The patient was taken to the hospital with the understanding that an operation was to be performed, nothing being asked by her nor said to her, about the nature of the operation. After going through the ordinary preparations ether was administered, an incision about four inches long was made through skin, fascia and part of the rectus muscle, and this was then at once stitched together with five or six interrupted silk sutures, and an antiseptic dressing applied. A small piece of cicatricial tissue, a remnant of parturition, was removed from the fourchette with the view of relieving the vaginismus.

The immediate effect of the operation was *nil*; as to the remote effect, the woman to-day, nine months after the pseudo-operation, without any other treatment whatever, is free from pain at her menstrual periods, and the vaginismus so much relieved that sexual intercourse, almost intolerable before, is readily indulged in without inconvenience.

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Now as to the history of the case in detail: Mrs. X——, a blonde German American, age 26 years, married, has had three children and no miscarriages. Occupation before marriage, domestic; family history negative; no serious illness during childhood, first menstruation began on her sixteenth birthday, and the suffering was such as to confine her to bed for a week; second menstruation at about seventeenth birthday, and the third occurred six months later; then an interval of three months elapsed and from that time on, menstruation was always regular and always accompanied by sufficient pain to compel going to bed for a few days. These pains were described as "cramp-like" and "bearing down," with tenderness over the whole lower part of the abdomen, and they were occasionally present in a less degree between the monthly periods. At the age of eighteen the patient married, being at that time in good general health and weighing 115 pounds. Dyspareunia was marked and continued so even after the normal delivery of the first child, fifteen months after marriage. The menses occurred at once after the birth of this child and were as painful as before. At the end of another fifteen months another child was born in normal labor, but this was followed by an amenorrhœa of eighteen months duration. During the first six months of this period, she was free from pain but thereafter she complained of occasional severe cramp-like pains, much local tenderness and increased vaginismus, despite the absence for twelve months of the monthly flow.

With the return of the menses, she had to take to bed for two weeks, and was compelled to repeat this for a few days of every month during the next three years, at the end of which time the third child was born. Patient said that while carrying this last child, she suffered considerable pain in the region of the ovaries and uterus. That labor occurred four years ago. The amenorrhœa of lactation lasted for six months, and the re-establishment of the menstrual flow was accompanied by no marked inconvenience, but thereafter the old trouble returned with renewed vigor.

I was first called in to see this woman about a year and a half ago, and at that time I found her in bed undergoing the usual monthly ordeal. She was moaning with pain in the pelvis and inclined to toss about in the bed; face was flushed, pulse rapid, temperature apparently elevated (the thermometer not being used at this time), tongue slightly coated, and the bowels not full—constipation never having been a part of her ills. There was such a marked hyperæsthesia that slight pressure on the abdomen with the palm of the hand, caused convulsive jerking and outcries; this sensitiveness was the most marked over the ovaries. In the hope of quieting the patient sufficiently to admit of a vaginal examination, hypodermic injection of morphia was administerd, but the effect not being favorable, the examination was deferred until the flow should cease. This occurred some days later, and then an intense vaginismus was revealed, so that the finger could scarcely be tolerated at the vulva. A thorough digital and speculum examination was, however, effected in consultation with Dr. H. F. Ewers, and beyond extreme sensitiveness and possibly some enlargement of both ovaries, nothing pathological was discovered. The uterus was normally large and in good condition. The presence of an unusual number of caruncular myrtiformes and a little cicatricial tissue

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about the fourchette, gave rise to the suggestion by Dr. Ewers that their removal might relieve the vaginismus and they were accordingly clipped off, but this procedure yielded no appreciable result. Dysmenorrhœa continued with one additional symptom, viz: an occasional chill and rise of temperature which gave rise to the first suggestion by a consultant of possible pus tubes. At one such period the thermometer registered 104.

For about nine months the woman went through a trial of most of the remedies usually given for her condition, but as she could not take morphia in any form, she fortunately escaped the horrors of the morphine habit. Vaginal douches were also precluded, because the introduction of the syringe tip was very painful and the douche itself more irritating than quieting. During the intervals between menstruations, the vaginismus and hyperæsthesia were pronounced, but not nearly so much as at these periods.

About ten months ago the proposition to remove this woman's adnexa was seriously set forth as the only curative means. About this time there were reported a number of cases of failure to relieve the symptoms by this operation, and as I was by no means satisfied in my own mind as to the role which hysteria was playing in this case, I suggested to my friend, Dr. Ewers, that we try the play of Hamlet, with Hamlet left out—in other words, we do an imaginary laparotomy.

The patient was taken to the hospital as above mentioned, at a time midway between her menstrual periods, and put to bed for two or three days. On August 24th, an incision about four inches long was made, not quite down to the peritoneum and closed with interrupted silk sutures; some little cicatrix of the fourchette was snipped off, and the cut edges approximated with two silkworm-gut sutures. The abdominal sutures were removed on the third day. The patient left the bed about the tenth day and the hospital in about three weeks—there being of course no necessity for so protracted a stay except to carry out the plan originally adopted.

At this time the patient's weight was 89 pounds. Her first menstrual period after leaving the hospital was painful, but markedly less so than any previous one. From this time on, the successive periods became more and more tolerable, the hyperæsthesia rapidly subsided. Within three months she indulged the sexual demands of her husband with but little discomfort and a few days ago, nine months after leaving the hospital, she informed me that the sexual act was accompanied by no pain. Her menses occur regularly and normally every month, and she has not taken to the bed once during this time, but on the contrary, goes about her household duties the same during the menstrual as the inter-menstrual period, and last month did her own laundry, washing for the first time in years. She has gained 14 pounds in weight since the operation and for all practical intents and purposes, is enjoying good health.

In answer to the probable suggestion that this was a simple case of hysteria, I will remark that the woman belongs to the laboring class, where morbid desire for an operation is not to be looked for; she was much attached to her husband and two children and would not leave them to go to a hospital from any whim, and the expense alone incurred in the

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undertaking, would have deterred her from going on ordinary hysterical grounds.

A prominent Chicago gynecologist suggested that the vaginal cicatrix may have caused the vaginismus and other reflex symptoms. But it must be remembered that this cicatrix was the result of parturition while the vaginismus dated from the day of marriage. One of the most singular features of the case to me is the coincident rise of temperature at the monthly sickness. There has been nothing of this noticeable since the operation, hence it must be considered, for want of a better explanation, another nervous symtom.

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SOME UTERINE TUMORS AND THEIR MANAGEMENT.

BY J. C. SHRADER, M.D., IOWA CITY, IOWA.

Mr. President and Members of the Iowa State Medical Society: There is a class of tumors styled benign that cause almost as much trouble in their treatment as do malignant ones.

I allude to that class termed uterine fibroids, myomata, fibro-myomata, etc. We will not discuss the manner of their development nor many of their symptoms, except that they cause the patient much suffering by pressure upon surrounding organs and their toxic effects in many cases and their especial tendency to hemorrhage—thus rapidly weakening the patient, causing her to become chlorotic, dyspeptic and nervous. In some instances they have a tendency to degenerate rapidly into a malignant form. I know it has been asserted by some writers that they never assume a malignant form, but later researches contradict this view, and now it is pretty generally agreed that they may assume a sarcomatous or cancerous form.

We have known that they may become cystic or calcareous, or portions of a tumor may slough, thus producing a septic condition and in this way endangering the patient's life. The treatment of these neoplasms has varied, very much depending upon the location, whether subserous, interstitial or submucous; also whether single or multiple, whether large or small, and also what complications exist, as a result of inflammation, hemorrhage or other form of trouble. In the last twenty years the treatment, whether medical or surgical, has varied very much. Quite a large number of remedies have been recommended and tried, but in cases without avail.

It is true that ergot, either alone or in combination with other remedies, has afforded relief in a certain class of cases, in the simple submucous or interstitial, various cures have been effected, but in the multiple form, whether cystic or calcareous, or in the subserous forms, but little can be done by the administration of drugs. Electricity, of which we know so much and yet so little, has latterly been lauded to the skies. I prefer Apostoli's method where one electrode (generally the negative) is introduced into the uterus and the other applied upon the abdomen by a large electrode of clay or of some other substance that can be readily applied to the round abdomen; from fifty to two hundred and fifty milliamperes can be used in these cases providing the current is regulated or turned on in such a manner that there is no shock, which can be done by using a rheostat. Weak currents do but little good and the higher powers require great care in their management or application and are then not always safe.

For tumors of the hemorrhage variety or those that are large and

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threatening the life of patient, we turn to surgery for relief. Here we adopt different methods, according to the location and size of the growth. Polypi and submucous ones, if not too large, are removed through the cervical canal by excoriment, ligature, galvano-cautery, with enucleation or "morcelleation"—even in the interstitial forms they can sometimes be removed by slitting the mucous membrane and the capsule and then enucleating them. If this is done before the patient is too weak and where there has not been much inflammation and being performed under strict antiseptic principles, a cure may be expected.

Hysterotomy has been of late quite often performed by either the vaginal method or by celiotomy. In very large tumors it becomes absolutely necessary to open the abdominal cavity. Then the question arises, which one of the many operations recommended shall we attempt to bring about an early menopause, by removing the ovaries and tubes? This can not be done in all cases, for the tumor may have grown so around them that it becomes impossible to secure them. For complete hysterotomy we have several methods. The extra-peritoneal method of securing the pedicle which is, of course, the cervix uteri, and which was the one most often performed until recently, the pedicle being properly secured in the lower angle of the abdominal wound. Then we have another of removing the entire organ with the growth, securing the rents found in the broad ligaments and closing the peritoneum below, affording a support for the intestines and admitting of drainage. Through hemorrhage or where a malignant disease has invaded the uterus,hysterotomy has been frequently performed and highly recommended by many operators as causing less shock and less danger of septic infection. A new method has recently been devised whereby the uterus can be removed through the vagina by almost a bloodless operation and in most cases without a ligature. This consists in making an incision in both anterior and posterior walls of the cervix, just below the attachment of the vagina, and then by the use of scissors, slightly curved on the flat, the great body of the muscular structure of the uterus is separated from the peritoneum and thus shelled out or enucleated without passing into the peritoneal cavity, unless we desire to do so to remove ovaries and tubes, then packing the cavity with iodoform gauze. While briefly described, this bids fair to become the favorite operation in small growth and especially if of a malignant character.

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CAN MATERNAL MENTAL EMOTIONS PRODUCE MALFORMATIONS, DEFORMITIES OR BIRTHMARKS?

BY J. W. COKENOWER, A. M., M. D., DES MOINES, IOWA.

There always has been and still exists a popular belief, in which a large proportion of the medical profession is included, that maternal mental influences during pregnancy can produce almost any degree and variety of deformity or birthmarks. It is the purpose of this paper to examine the cause of this belief, and to determine how far it is justified by well established facts, as well as logical and scientific reasoning. I have not had, in fact no one obstetrician has ever had, sufficient experience to base all the thoughts of this important subject upon his own personal experience. Hence, the plan of argument will be, first, to present what has been and is claimed by the advocates of the affirmative; and secondly, what has been done by the defense to refute the superstition, satanic progeny and ancient credulity, with modern scientific embryology and pathological histology.

Among ancient authors who advocated the affirmative, may be mentioned Hippocrates and Aristotle, who considered any deviation from the normal type, in the development of the human body, with wonder and superstitious awe.

However, in more modern times, the subject has received so much attention from physicians and embryologists, that the literature of to-day on the subject, assumes a very different character.

Prof. Wm. A. Hammond, ex-U. S. Surgeon (*Quarterly Journal Psychological Medicine*, Vol. II), relates the following case which occurred in his own practice, and he thinks scarcely admits of a doubt as to the influence of the maternal mind over the physical structure of the fœtus: "A lady in the third month of her pregnancy was very much horrified by her husband being brought home one evening with a severe wound on his face, from which the blood was streaming. The shock was so great to her that she fainted, and subsequently had an hysterical attack, during which she was under my care. Soon after her recovery she told me she was afraid her child would be affected in some way, and even then she could not get rid of the impression the sight of her husband's bloody face had made upon her. In due time, the child, a girl, was born. She had a dark red mark upon her face, corresponding in situation and extent with that which had been seen upon her father's face."

Dr. Hammond further says: "Doubtless many of the stories told, illustrating this theory, are false, many others are exaggerations, and many are mere coincidences; but after eliminating all these classes, there still remains another group which has every appearance of being based upon actual truth, and which it is impossible for the candid inquirer to reject."

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Prof. Dalton, of New York, related the following instance to his medical class during one of his lectures on physiology: "The wife of the janitor of this college during her pregnancy dreamed that she saw a man who had lost a part of the external ear. The dream made a great impression on her mind and she often mentioned it to her husband. When the child was born a portion of one ear was deficient, exactly like the one she had seen in her dream."

Dr. Dalton further says, in his Treatise on Human Physiology, 4th edition: "There is little room for doubt that various malformations, deformities and deficiencies of the fœtus, conformably to the popular belief, do originate in certain cases from nervous impressions, such as disgust, fear or anger, experienced by the mother, and that impressions will sometimes reach the fœtus in its recess, cut off its legs or arms, or inflict large flesh wounds prior to birth, are inexplicable, as well as indisputable facts."

Dr. O'Reilly, of New York City, reported the following to the New York Academy of Medicine: "An indulgent husband dashed out the brains of an annoying cat, when his wife was four months advanced in pregnancy; when the full term had expired, she produced a child whose head resembled that of a cat."

"A beetle crept across the back of a pregnant lady's neck, who fainted with fright, and continued in a state of suspended animation for a long time. She was subsequently delivered of a coleopterous or beetle-like child."

"A man had a perfect picture of a pig represented by a nævus or birthmark on his back, which was claimed to be due to his mother being frightened during gestation, by a black pig suddenly running from behind a currant bush, while she was walking in the garden."

And thus I could go on multiplying modern instances of malformations, deformities and birthmarks, such as club-foot, knock-knee, bow-legs, "hunch-back," crooked-neck, and many others, which I have not time, in this brief paper, to mention. They are all similar, differing only in degree, with occasionally one in which the coincidence of the "mark" or malformation and the alleged cause, is very striking, and on a superficial view would appear to stand in relation of cause and effect. However, a more careful investigation of such instances, shows a series of cases in which the same vices of conformation are found, yet a great variety of different causes assigned.

The question under consideration has, and I believe always will be a popular one, not only among the physicians in this country, but Europe; not saying anything about the almost universal belief among the mothers, that maternal mental emotion has much to do with their unborn children, which I think is amply verified, not only from the cases heretofore mentioned, but from the many other cases, which have from time to time come under the observation of almost every practising physician.

Such are the many statements and character of cases brought in evidence, upon which the doctrine of maternal mental influence, in the production of vices of conformation and birthmark, is believed by its advocates to be established. It now remains for me to present the facts which go to prove the unsoundness of this popular opinion, and endeavor

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to reconcile the apparently discordant testimony with the laws of embryonic development.

This prompts me to inquire, to what extent has traditional superstition been the means of establishing the almost universal popular belief that the maternal mind exercises a constructive or destructive power, in the development of the fœtus in utero, adequate to the production of various degrees of malformations? Nothing has done more to eradicate this doctrine than education and civilization, which have been the means of making a progressive step in removing the origin and cause of physical malformation from the sphere of devils, or angry or unappeased gods, to the more controllable and less frightful power of the mother's mind, disturbed by ardent longings for innocent fruits, or by the sight, sound or touch of objects of disgust or fright.

It is to be hoped that another progressive stride will be made and seek an explanation of malformation in the realm of embryology and pathological histology, and regard the anxious and sensitive mother as being no more responsible for deviations from normal fœtal development, than the unthinking animal, cold-blooded reptile, or the unfeeling plant, which all produce their dwarfs, giants, malformations and deformities, with the same degree and variety.

Science would have never made but little progress if it had been contented with the "Royal Touch," "Peeled Rods," "Jacob's Cattle," and the unquestioned faith in maternal mental emotions. I believe my own experience will accord with that of most obstetricians, that malformations, deformities and birthmarks are rare and the number small compared with the whole number of births.

The only statistical record I can find of malformations is in the *American Journal of Medical Sciences*, reported from the Imperial Lying-in Hospital, in Vienna, of 23,413 births, out of which there were only 60 malformations, of which club-foot and hair-lip predominated. Hence, if we compare the frequent mental emotions of the many gestating females with the rarity of human malformations, it would seem clearly proven that the maternal mind does not exercise any influence in the abnormal physical development of the fœtus in utero.

Dr. Hunter, the author of The Anatomy of the Human Gravid Uterus, pursued the right course on this subject. He made inquiry in 2,000 cases of the mothers before the birth of their children, as to their apprehensions and mental emotions which they had experienced that might mark their children, and in no case did a single coincidence of mental emotion and a corresponding abnormal development occur in all his observations.

There is no end to the many diseases which the human body is heir to, every organ having some special kind of ailment; hence it is as reasonable to believe that the ovaries, fallopian tubes, uterus, in fact every distinct part of the generative organism is as liable to be impaired and diseased, rendering their power of reproduction abnormal in proportion to increased or diminished nutrition and circulation.

The embryological principles involved in developing certain malformations, save the heart and digestive organs, commence with the early product of conception, and consists of two lateral and symmetrical halves

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which subsequently come together and are agglutinated upon the median line so as to constitute the body, and then the process of evolution proceeds from the periphery to the centre, those portions most remote from the median line being formed first and the others last. Hence the fingers are formed before the hand, the hand before the forearm and the arm proper still later, the ears exist before the eyes, these before the nose, and the same plan of development to the trunk and lower extremities. Any arrest of evolution before the development of any or all parts of the body be completed, must result in malformation, corresponding to the stage of evolution, at the time of its arrest. If, for example, the hand has been formed and the process of evolution arrested, the child will be born with a hand where the shoulder should be, without arm or forearm. If after the formation of the ears, head and eyes, there be no further evolution, and the two halves agglutinated, the nose and central portions of the upper jaw will be absent at birth.

Cyclops, or one-eyed beings, are formed by the union of the two lateral portions of the head, just at the time when the outer half of each eye has been completed, hence can never have a nose, because of the arrest of evolution, and the union which has taken place before it could be formed. The failure to unite the two halves at any point of the median line, must leave fissures where none should exist. Hair-lips and cleft-palates are thus produced. The process of evolution may be excessive, as well as incomplete; when excessive in certain portions of the capillaries, these blood vessels, which are in the normal state, become engorged and so enlarged as to carry an excessive amount of red blood to certain localities and thus make birthmarks or nævi—excessive evolution may produce supernumerary fingers or other appendages.

One of the most hideous deformities is that which results from an arrest of development of the brain and cranial bones, producing a child without brain or head proper, while the face is fully developed, which gives an appearance, not unfrequently compared to that of a frog or dog's head. We must admit, in view of the principles heretofore mentioned, that, if the maternal mental emotions ever affect the fœtus, so as to induce deformity, it must be done at the precise time when the deformed part is undergoing evolution, for the difficulty would be greater, if after evolution had been completed the emotions of the mother would destroy it and reproduce an anomalous one in its place. If, for example, in the case of hair-lip, suppose the mental emotion occurs after the formation of a healthy lip, it would be impossible for any mental emotion to produce hair-lip.

It seems to me, we would be burdening our credulity to think that any maternal mental emotion could induce the destruction of such extensive and important organs after they had once been formed. The cause, whatever it may be, that gives rise to such deformity, must be operative before the evolution of these portions of the body are developed, for all malformations, deformities and birthmarks, are due to an arrest or accelerated evolution. A word of explanation about red, violet or black birthmarks, which always become more intensified or brighter from mental

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emotions or heat, which is verified in summer months during berry time, hence are claimed to resemble fruits.

Viviparous and oviparous development differ only in this respect: in the latter, the ovum is fecundated, and is expelled from the ovarium and undergoes embryonic development outside the body of the mother, while the former, the ovum after fecundation passes from the ovary through the fallopian tube, and becomes attached to some portion of the interior of the uterus, where the development takes place, after which the only communication existing between mother and child, is through the placental sinuses and umbilical cord, which excludes all nerve filaments. Should the ovum lodge in the fallopian tube, instead of the uterus, extra uterine pregnancy will result.

Some of the causes that may produce abnormal development are due, no doubt, to inferior generative matter of one or both parents and their offspring inherit their peculiarities and malformations. It may be due to some enfeebled condition of the generative organs. It may be due to some traumatic injury to the fœtus, which will modify or arrest the normal evolution.

The following summary approximately represents some of my conclusions on the subject:

That traditional superstition has been the means of perpetuating the maternal mental emotion theory of malformation; augmented to some extent by the medical profession.

That various intense mental emotions and expected malformations are common with all gestating women, yet, abnormal births are exceedingly rare, and the alleged law governing them of futile utility.

That the apparent relation of cause and effect is due to accidental physical and evolutional coincidences, which would be less frequent, if the facts could be learned previously, instead of subsequently to the birth of the child.

That like causes produce like results. Hence, malformations should be manifested accordingly, yet a diversity of maternal emotions are assigned to the same cause of deformity.

That in a large proportion of the cases of malformations, no mental or even physical explanation is offered by the parents or friends.

That nævi or birth-marks are due to retarded, arrested or accelerated local capillary circulation, and perhaps physical embarrassment to normal development.

That malformations may arise from abnormal generative matter of one or both parents, abnormal maternal organism, or from diseases of the ovum and umbilical cord.

That malformations of the same kind and degree occur repeatedly and can be systematically classified, whether in the animal or vegetable kingdoms.

That the time has arrived for exploding the theory of maternal mental emotions producing malformations, deformities and birthmarks.

That it is the duty of the medical profession to eliminate from the mother's mind, that any maternal mental emotion can have anything to do, whatever, in the formation or development of her unborn child.

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If this paper shall serve to awaken a greater interest among the medical profession in organic development and embryology and assist in counteracting and allaying the groundless apprehensions of sensitive and imaginative pregnant women, I will have reached the summit of the aspirations that prompted me to prepare these thoughts upon so important a subject.

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ANESTHETICS IN LABOR.

BY D. JACKSON, M. D., PLEASANTVILLE, IOWA.

If an excuse was needed for presenting to this Society the subject of the use of anesthetics in labor, it could be found in the fact that notwithstanding they have been in use for over half a century to relieve or mitigate suffering, their use and application in labor has been discussed by all kinds of medical writers from the days of the great Simpson to the present time. Yet the mass of the medical profession not only do not use them in such cases, but look upon their use as a species of meddlesome midwifery to be studiously avoided. They cling to that remnant of old superstition which taught that it was wrong, that it contravened the word of God, to interfere with natural suffering. They follow the example of those self-important men who scoff at and "scism" every new truth or advance made, and meet every advance of science with opposition and skepticism as if all truth had been discovered and nothing remained for us to learn, heedless of the fact that the heresy of yesterday has become the belief of to-day, and what we now deny may become part of our creed in the future. I believe with Lusk that "many fair lives are needlessly squandered because of excessive timidity begotten of imperfect obstetric teaching." I believe it is a correct statement to say that anesthetics are clearly indicated in a majority of cases of labor. "If they are agents designed and having the power to relieve pain it is difficult to conceive of a condition more appropriate for their use than the one under consideration." "The physical and mental distress which frequently accompanies this function certainly demands the employment of agents which possess the power to furnish relief," and particularly so when their judicious employment neither lends to the perils of mother or child. Pain long continued is a powerful nerve depressant and when confined with starvation and the deprivation of sleep which usually occurs with it, it greatly impairs a woman's capacity to resist the perils of parturition. It is a well known fact to all physicians of experience that there are certain characters of uterine pains in highly nervous women, which suspend uterine action. This is probably due to the fact that the nerves of the uterus derived from the cerebro-spinal system possess inhibitory properties and "an agent which temporarily removes the inhibitory action of the cerebrum and leaves the ganglionic centers of the spinal cord free to furnish the uterus with the normal stimulations essential for the rhythmical contraction of uterine muscle." Some of the greatest dangers to mother and child in parturition may be lessened, diminished or avoided by the skillful use of anesthetics, such as shock, exhaustion of uterine muscle, and hemorrhage as a result of exhaustion, the tendency to laceration and injury to the maternal parts, and injurious pressure upon the child and further we may turn the scale between normal and complicated

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labor by the use of those agents." The disadvantages that have been urged to exist from its use such as depressing influence, post-partum hemorrhage, etc., are the result of the improper use of the agent, or in other words are due to the ignorance or carelessness of the administrator. "It is true that the giving of anesthetics in labor is an art to be acquired, a simple one, but the practice of which admits of neither ignorance nor carelessness. The safety of the procedure depends upon the following well-known facts: First, that the pain is sufficiently controlled by far less anesthesia than would be necessary for surgical purposes; less than would be needed to stop either uterine contraction or contraction of the abdominal muscles. Second, that the intra-abdominal pressure in the second stage of labor before evacuation of the uterus has occurred, is too great to make it possible for the patient to inhale too much if given only during the continuance of the pain, which is the only time when it should be administered at all." While statistics teach us that even with the greatest care there is always danger in the use of anesthetics for ordinary surgical purposes; that deaths occur once in 3,000 inhalations of chloroform on an average. Yet in looking over such statistics as were obtainable, I find 46,285 cases in which chloroform had been employed in labor and not a death therefrom. From the above it will be seen that women in child-birth seem to enjoy an immunity against the accidents which sometimes occur from anesthesia in surgical practice. Anesthetics should not be used in the first stage of labor where the process is carried on in a physiological manner, but any deviation therefrom requires it in this stage. Nor should it be used in the third stage of labor, only "in those cases in which the placenta is retained by spasmodic contraction of the uterus, and in any condition in which a well-marked contraction ring threatens uterine rupture," nor when there is organic disease of the heart. Although Prof. Davis, of the Philadelphia Polyclinic, says, "Even in cases where valvular lesions are present in pregnant women, an anesthetic has been shown to be a most efficient aid in promoting speedy and successful labor."

Ridgeway Barker quotes Snow, Champiomin, Vergely, Macdonald and others to prove that "chloroform properly administered can and should save the life of lying-in women afflicted by heart disease, even if death appear imminent from the overwork of that organ; overwork of reflex origin, not only is chloroform not to be neglected in those cases, but on the contrary, it is strongly indicated." A careful physical examination should be made in every case, for men are frequently deterred from using it when badly needed in highly nervous women with rapid small pulse, who tell them that fright or sudden exertion causes embarrassed respiration from the supposition that such symptoms indicate heart trouble when such condition does not exist; nor should it be used in those extremely exceptional cases where, even in the smallest quantity, it diminishes the force and frequency of the uterine contractions and that diminution lasts for a long time. There is no doubt of its efficacy in the minds of the members of the profession who have had experience in its use, and "all are of the opinion, with one accord, that normal labor is facilitated and the pangs of the acme of the second stage mitigated by the use of small quantities of anesthetics." I believe the *Canada Lancet* is

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right when it says that "it is safe to say that whether the practitioner has been taught in his student days to use it or has been instructed on that other line, which has fully developed in it all the merits and demerits of conservatism, that 'nature is the best midwife and should be left to take her course,' he will not use them more than once or twice in practice without being converted to their use in every case, normal or otherwise, in which they are not specially contra-indicated." Individually, I prefer chloroform as the anesthetic to be employed, from the fact that it is more agreeable, more manageable and more rapid in its action and the dulling of the sensibilities is much more readily effected by it than any other anesthetic. Administer only during the continuance of the pain on napkin or mask, never in a cone, for the cone necessarily prevents the admixture of the atmospheric air. Watch the movements of the diaphragm during the administration of the anesthetic, for those centers that govern the movement of that muscle first perceive the stimulating action on the respiration and they are also the first to become paralyzed. Failure of respiration will probably first be noted by failure on the part of the diaphragm. We should take this as our guide in the administration and withdraw the anesthetic when the movement of this muscle becomes embarrassed. Thus will the danger be rendered *nil* and the pangs of parturition robbed of their terror and the condition rendered tolerable.

DISCUSSION.

DR. DORSEY. *Mr. President:*—Some of the remarks that I made in the paper that I read this morning bear directly upon this subject of anesthesia and that was one of the reasons why I advocate early operative procedure to avert the necessity of the administration of anesthetics in connection with labor. By timely delivery we prevent a shock; we do not increase the pain and we certainly lessen the danger of that fearful calamity that sometimes is met with, viz., post-partum hemorrhage. We recognize that the administration of an anesthetic at this very time, viz., when the pain is at its acme, at the close or near the second stage of labor, viz., when the head is passing through the pelvic outlet, that we have that excruciating pain when those that advocate the use of chloroform say that this indication, right at this time, and upon the close of this, immediately as the head is born, we find the next pain in expelling the body. Immediately upon this expulsion we find there is the third stage of labor, and it is during this stage we are liable to have post-partum hemorrhage; and provided we have complete anesthesia where—when it is more dangerous for the patient to be chloroformed or partly chloroformed—we are likely to have post-partum hemorrhage and we are likely to have injury of the uterine cavity, especially under the instrument delivery where we have the patient partly anesthetized. And I want to tell you that the times when I administer anesthetics for delivery are few and far between. Only when I have a nervous, excitable patient do I administer anesthetics until I get the forceps in place and never allow the second stage to be completed until my patient is completely out from under the influence of an anesthetic.

DR. SHRADER. *Mr. President:*—I judge from the doctor's remarks

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here that he believes that if anesthesia is pushed to its full degree at the end of the second stage the danger of post-partum hemorrhage is increased.

I came to that conclusion long ago. It was a very good point to get the expression of the members of this Society who have had a great deal of experience in obstetric practice; also to know whether my conclusion and that of the doctor here were really correct. Our text-books on obstetric practice are not at all very clear in this particular, as we know. They advise the use of anesthetics in a general way, but that is not sufficient for a practitioner or for the instruction of the medical student. They want something definite, and I hope that the members of this Society will give us their opinions in regard to that matter; what their experience has been in regard to the recurrences of post-partum hemorrhages; what patients have been brought to the surgical degree of anesthesia, and is this general in those cases produced by chloroform. That it is usual in many cases there is no doubt. That there are dangers or injuries done to the patient many times in instrument labor where the patient is completely anesthetized to the surgical degree, there is no doubt. The patient then cannot manifest by any sign or symptom whether she is being injured or not, and if the doctor should become a little excited or a little nervous, he may do a great deal of harm. If the patient has not been anesthetized to that degree or only moderately so, or very slightly so, or, as the doctor suggested, until after the application of the forceps, the anesthesia is withheld, any injury being done is likely to be manifested to some extent by the patient and put the physician on his guard in that direction.

While I am in favor of anesthetics in midwifery, still I believe they are used more often than is really necessary; that they are carried to a degree perhaps I should say, that is not really necessary in many cases, and that while it dulls the sensibilities of the patient, it does not, under such circumstances accelerate the labor, but rather retards it, and does not really aid the patient in recovering from her puerperal condition which follows labor. This is a very important question and before saying anything further on the subject, I should like to hear from some of the members of the profession who have had a large experience in this matter, for it is an interesting one to me.

DR. PORTERFIELD. *Mr. President:*—Dr. Shrader has touched on some points and uttered some other sentiments that I had in mind. I suppose that the man who successfully uses anesthetics in his practice will largely increase the same and the women will rise up and call him blessed, after the trying ordeals of labor are ended which is very dear to the mother; but whether the risk she incurs in the use of anesthetics would justify the accoucher in employing it, as Dr. Jackson advocates in his paper, in the majority of cases, I am seriously in doubt. I am satisfied the friends of the profession are not united in their views on this matter. But I believe that the dangers are first from the anesthesia, and I think I am right when I say that there have been better results from the primary use of chloroform than there has been from the complete use of a drug, or a patient more completely anesthetized. If the use of chloroform is to

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reduce to a complete relaxation; if the relaxed uterus is more likely to bleed than one firmly contracted, surely the danger from the administration of chloroform to the woman is enhanced by the administration of any agent that would tend to relax and render flabby the muscular walls of the uterus and, indeed, I think that while chloroform may have its place, that this is one of nature's processes and that we are more likely to have good results and will save more mothers if we employ it judiciously and only in those cases of most extreme pain.

DR. J. T. PRIESTLY. *Mr. President:*—I say a man who would put on a pair of forceps and deliver a child with no contra-indication to chloroform is a brute. I think any man who would put his hand up in the uterus to perform version, when there is none such, is a brute; I think it is perfectly brutal, when you can relieve the pain and suffering of the woman by administering chloroform, when there is no more danger than there is in giving an emetic. The gentleman has just given the statistics of forty-six thousand cases without any fatal results.

Now, in post-partum hemorrhage, I don't know, I think it is over three thousand cases of labor I have seen, and I have never seen a case of post-partum hemorrhage that was dangerous to any great degree from the use of chloroform. Some men may and some may not call moderate bleeding post-partum hemorrhage. I would not. It varies greatly. I have attended women, more than one, where the placenta has been delivered entire and not a drop of blood to soil the person, until ten or fifteen minutes after the placenta was delivered. Some have more than others. I have seen more than a quart flow away and yet would not call it post-partum hemorrhage, but I have seen gentlemen who would call that post-partum hemorrhage.

The administration of chloroform produces relaxation of the uterus, makes the woman's lot more easy to bear, makes less danger of a torn perineum and certainly anyone who would put on a pair of forceps as Dr. Dorsey and Dr. Shrader, and say that the woman can tell you are hurting her while you are dragging that through, is nonsense. They cannot tell whether the forceps are tearing them apart or cutting them and causing excruciating pain, but if you put the forceps on and then chloroform you get a full dilatation and you can take your time to it, and you certainly get far better results than if you do not use an anesthetic, and I think it is only human to use it.

DR. HATTON. *Mr. President:*—As Dr. Shrader has said, this is a subject of very great importance. Perhaps there has been none before the Society that is of greater importance to suffering women than this means to mitigate this suffering. The subject of anesthetics is one to-day under discussion, not only in the text-books, but also in the journals on obstetrics. You see this discussion in almost every journal—some reference to it. I did not have the pleasure of listening to the doctor's paper, which I am very sorry for, as I wanted to hear it, but from the trend of the discussion, I am rather inclined to think that a conservative or middle course would be safer than either one of the extremes that have been advocated here. For a number of years it has been in very few cases, indeed, of confine-

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ment that I have not given chloroform; very few, indeed, and, particularly if the woman is suffering from that intense pain of delivery that is almost invariably present. But I apprehend that the statistics that Dr. Priestly refers to of such a large number of cases in which there was administration of chloroform without a death have been because of the falling short of the surgical degree of anesthesia that Dr. Shrader referred to.

Dr. Porterfield refers to the primary death rate from the administration of chloroform. I differ with the doctor in regard to that. I had the misfortune to lose a case on the table that died from the influence of chloroform to the surgical degree; the overwhelming majority of these cases are from the use to the surgical degree. Let me tell you—perhaps many of you have administered chloroform as frequently as I have—in the administration of chloroform I do not, even in the application and delivery by the forceps, give it to the surgical degree. I do give it to the surgical degree in a difficult case of version where the waters have long been drawn off and the delivery retarded by the inequalities of the child. I give it to this degree at such time largely for its effect in the relaxation of the muscular tissue of the womb. If the administration of chloroform in a perfectly safe manner be certain, as to when the pain occurs, time those pains; ascertain the time as near as you can and just prior to the time of each pain give the woman five or six whiffs of the chloroform and she will get through with that pain with scarcely a murmur, and when she gets through with it omit giving the chloroform and at the next pain, giving it and so on through in that way and there will be no death and you will employ one of the greatest boons that womankind has. I think that the reason there are not more fatalities from the use of chloroform as an anesthetic is because it is so seldom pushed to the surgical degree. There are very few emergencies in which it is necessary to push it to the surgical degree.

Now, in reference to post-partum hemorrhage, I do not believe that any woman ought to die with post-partum hemorrhage. I believe that any man that loses a case by post-partum hemorrhage is derelict in his duty, and that is the view taken by the very best authorities that we have. Now, I have given chloroform in the process of turning and to the surgical degree; that was just a short time ago. Ten minutes before I expected the delivery of that child by version, I gave that woman a hypodermic injection of ergot, and have never had any accident happen from the administration of the chloroform. We get a contraction; a hard, permanent, firm, contraction. And, by the way, I do not believe anything in this hour-glass contraction from the administration of ergot, as is advocated by some leading authors. I do not believe it produces it at all under those circumstances. By the hypodermic administration of ergot ten minutes before the child is delivered will be certain to prevent post-partum hemorrhage, because it brings on that firm contraction and a contracted womb cannot bleed.

Now, in regard to the producing of anesthesia in the use of the forceps. I say that any physician that has experience, has studied anatomy of the pelvis and the presentation of the child's head, ought to apply those forceps without giving the woman any pain and the additional pain that is inflicted by the traction power of the forceps is simply that nerve com-

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pression, that is all; so that it does not require the surgical degree of anesthesia to deliver a woman with the forceps. It is not necessary in the vast majority of cases. It is necessary, understand me, in a cutting operation, or in the operation of version where the waters have been long drained off and the woman is exhausted.

DR. H. G. EMERY. *Mr. President:*—I cannot conceive of a man so illogical that he will administer morphine hypodermically to a parturient woman and yet objects on account of post-partum hemorrhage to administer chloroform. I believe that chloroform is far less apt to produce post-partum hemorrhage than morphine administered hypodermically. The dangers that we hear spoken of in regard to chloroform in partial anesthesia are usually those which occur in the dentist's chair, where the patient is in an upright position: there is where the danger is. It has been called a partial anesthesia, when the true position is the upright position and not the reclining. Since chloroform has been used in anesthesia, as the paper states, there has been almost no bad results, or no deaths therefrom; and I think that the man who objects to the use of chloroform ought to be relegated to the ranks of those old preachers that objected to its use on theological grounds.

DR. JACKSON. *Mr. President:*—This is a question that has been of considerable interest to me and I am glad it has been discussed in the manner it has. If the doctor on my right (Hatton) had been here he would have noticed that the paper did not recommend that it be pushed to the surgical degree and that in the pains of labor we should administer it to far less than the surgical degree.

I believe the doctor is right in the proper position of the chair in dental cases. I have seen three, I think, accidents occur from chloroform in the hands of other men, and they were all pushed to the surgical degree. They all occurred in the hospital, in hospital practice, and the statistics—none that I could find—I could not find a solitary case, and I searched the library of Des Moines and all the medical libraries so far as I could, the journals and such standard works on obstetrics as I could obtain, and I could only find one case in which it came near occurring and that was a case reported by a physician in which it was from carelessness on the part of the assistant. If that be true, and I take it to be so, I think the man who attempts to deliver a woman, especially in those cases where excruciating pain is present, is derelict in his duty. I think it is his duty to carry it with him and administer it whenever it is needed.

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A RARE CASE OF CONGENITAL MALFORMATION COMPLICATING LABOR.

BY H. E. W. BARNES, M.D., CRESTON, IOWA.

I shall occupy the attention of Society briefly, with the narration of a case and will omit, for obvious reasons, dates and location.

This lady was 33 years old at the time of her last confinement; she is perfectly formed, excepting that the rectum terminates in the vagina about two inches from the vulva; her weight is 165 pounds. This was her third confinement—the two previous ones necessitating the use of the forceps—the first child living but a few months, the second, owing to the large size of the head and the compression required to effect its exit, lived but a few moments.

Her first confinement was conducted by another physician, She came under my care in the second, and when I was requested to again take charge of the case I was constantly in great trepidation until the labor was over. As the fecal discharges pass through the vagina the lower part of the vulva partakes more of the nature of an anus than of an normal vulva, hence when the head passed through the straits, it rested on the perineum —if it could be so termed. In her second labor the parts were so unyielding and tense that it was impossible to perceive any distention and the head of the child had to be crushed sufficiently to pass through this outlet. In the second labor she made a good recovery. I submitted the case to eminent gynecological authority with a suggestion to cut on each side of the vulvo-anal opening when the head rested against the perineum. They sanctioned and approved the procedure. I submitted the proposition to the lady's husband (a very intelligent gantleman) who was perfectly willing, but no amount of persuasion could overcome the prejudice of his wife against any operation. Therefore, when I was called to attend her a second time, it was with the same feelings I had when called to my first confinement case at the age of twenty-one.

The bowels were thoroughly evacuated before the labor began; the vagina disinfected, the labor came on rapidly, the head passing down and resting on the perineum in a much shorter time than in the second labor. In the same position where the head of the second child became impacted this head came to a standstill. The uterine contractions were frequent and powerful. After a close examination I believed we had a smaller head to deal with than before. I applied the forceps and lifted the head up and out without any crushing efforts. The child (a girl) was born with no injury to the head. There were a few abrasions (as I afterwards discovered) of the mucous membrane at the posterior part of the vulvo-anal opening. The placenta and all the membrane were readily removed. I thoroughly

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disinfected the vagina with a one two-thousand solution of bi-chloride of mercury and felt that "all's well that ends well." But on the fourth day a chill supervened, the temperature ran up to 105°; she had delirium. I immediately washed out the uterus with negative results. The bowels had moved the second day but her husband had washed out the vagina thoroughly after each operation with bi-chloride of mercury, one to two-thousand. I examined the vagina and vulvo-anal opening and found small abrasions in the mucous membrane that had a dry, inflamed appearance. I believed then, and do now, that the discharges from the bowels passing over this abraded surface were absorbed and produced the infection. I applied a saturated solution of argenti nitras to the abrasions and considered the proper constitutional treatment to pursue. Should I give Epsom salts? If I did not could I combat the violent peritoneal inflammation? If I did I would be constantly pouring into a puerperal vagina a sewer of infection. Should I escape Scylla would I be wrecked on Charybdis?

I elected to administer the Epsom salts and gave a saturated solution of half ounce doses every fifteen minutes from 4 p. m. until midnight. The discharge from the bowels at that time was watery, the temperature gradually came down and by noon of the fifth day was normal. After each and every discharge from the bowels her husband thoroughly irrigated the vagina with a one to two-thousand solution of bi-chloride of mercury.

Sulphate of quinine in six grain doses was given for twenty-four hours, every two hours, and from one-half to one ounce of brandy every half hour, in all twenty-four ounces of brandy the first twenty-four hours. These doses were all gradually decreased; the second and third days one-half to one ounce of cold water was given as often as asked for, and that was every ten or fifteen minutes for the first twenty-four hours. She improved rapidly excepting an abscess formed in the left breast. I evacuated the pus and washed out the cavity with peroxide of hydrogen. The breasts gave us no further trouble and she made an uninterrupted recovery.

DISCUSSION.

DR. SCHOOLER. *Mr. Chairman:*—The case presented by Dr. Barnes in his paper in regard to the opening of the anus into the vagina was quite interesting to me. Have had cases—two or three—of that kind. I have no doubt the conclusion arrived at by the author of the paper, in regard to the infectious character of the discharges from the bowels over the mucous membrane of the vagina produces symptoms by the absorption of the matter. My experience was, in this case, that where there is no anus—in the absence of the anus—and that the lower portion of the rectum simply opens into the vagina; that it is an impossibility to clear out the lower portion of the bowels with purgatives of any kind; on account of the narrow opening, the rectum becomes distended until the entire pelvis and sometimes the entire abdomen is filled to the stomach with hardened fecal matter. I remember distinctly a few months ago of operating upon a case of this kind. After the restoration of the anus in its proper place in a girl 11 years old, notwithstanding a cathartic had been given thoroughly, and the attending physician and the father and mother and friends thought that the bowels were thoroughly evacuated, yet the abdomen was distended con-

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siderably with hardened fecal matter, extending up to the stomach, and when the small opening of the vagina was enlarged, I cannot begin to tell you the quantity of fecal matter that was removed from that rectum and a large portion had to be broken down with the finger for the purpose of removing it; irrigation was not sufficient—irrigating with a strong stream of water failed to make any impression upon the mass. There was a mass there filling all the pelvis and the lower portion of the abdomen that had almost the consistency of clay except it was harder and firmer than the blue clay that you find in digging wells in this country and how long that had been there, no one knows; but certainly a portion of that matter must have been there during the entire life of the child. It was evacuated thoroughly and broken down and irrigated, but notwithstanding that and all the antiseptic precaution, the incision necessary to enlarge the opening, afforded sufficient area for the matter to infect and the little patient died in three or four days, with symptoms very much like septicemia. This matter contained in the alimentary tract for a very long time certainly undergoes a very great change and it is more purulent and more likely to produce sepsis, or a condition akin to sepsis, with results more fatal than almost any other condition that I could conceive of. I would much rather deal with a pus cavity or with a suppurating wound or an operation of any kind, though there be an unhealthy condition present than to deal with this condition of the alimentary tract where there has been a putrid mass, a mass that has undergone changes from time to time, although you may irrigate, apply antiseptics, etc. There is no way to prevent the surface from becoming infected by this retained material in the alimentary tract. As a matter of course, a large number of these cases, owing to the inability to void the fecal matter, and the constant absorption going on all the time, are in poor condition of health, and it is impossible, frequently, to improve the condition very much; consequently you are placed at the same disadvantage in evacuating the matter without producing an abrasion or cut or torn surface, which must become infected by it, because the opening must be so small that you cannot introduce the finger or any instrument sufficiently large to overcome it.

Again, a patient that has a distended rectum or the whole alimentary tract torn and distended by the contents in this way, is very much in the condition of a patient who suffers from abdominal tumor, and when those large quantities were removed, by whatever means, there is an entirely altered condition of the flaccid condition of the intestines far beyond any that occurs in acute diseases, and when that thing is suddenly removed, the system has to adapt itself to the changed circumstances and it seems to produce a great degree of prostration and shock as a result, even though no cutting operation were done, so that I am inclined to think that the next case I have to deal with of that kind, I shall make no attempt to empty the alimentary tract at one sitting and shall attempt to empty it without any cutting operation or abrade the parts, thereby giving an opportunity for suppuration, but in the same way that I would void the urine of an old man with an enlarged prostate gland. In that way I would hope to avoid the shock; hope to get it away in piece-meal, allowing the system

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to become adapted to the less quantity of the material and in that way greatly secure the desired result and do my operating afterward.

I think the paper is instructive from the standpoint of the obstetrician; the rectum surgeon, and the general practitioner, because everyone who is in general practice is liable to see cases of that kind occur frequently and will be called upon to remove the defect.

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SOME REMARKS CONCERNING ABORTION.

BY F. W. PORTERFIELD, M. D., ATLANTIC, IOWA.

The writer of an article recently read before a well known gynecological society commenced his remarks by stating that it was customary to apologize when one presented a commonplace topic for consideration. If his statement is true I owe this section something in the way of excuse for presenting a subject that was old before many of the modern gynecological procedures were even thought of. But it seems to me that more real benefit can be derived from the discussion of a condition that is met with almost daily in general practice, than can be realized from listening to articles upon hysterectomies, abdominal sections, etc.; conditions and operations that the general practitioner is called upon to meet rarely or not at all.

For these reasons I have chosen the subject of abortion for this paper. For the purposes of this article every premature expulsion of the ovum is considered an abortion. The importance of this subject will be apparent when it is known that fully fifty per cent. of all the cases of pelvic trouble that come under observation are either directly or indirectly due to the effects of abortion. One of the most important things in connection with the management of abortions, (and in this connection I speak of criminal abortion), would be means taken to prevent their occurrence; I know nothing of the experience of other physicians, but in reviewing my own, I am appalled at the frequency with which I meet the evidences of this crime. The demands of society, the duties of home, the dread of the necessary retirement and of the pain incident to parturition, not to mention those who seek in abortion a cloak to hide their shame, go to make up some of the reasons and excuses that are given every day and actuate refined, intelligent, and educated women, to approach their medical advisers asking them to commit abortions with as much unconcern as they would ask for a prescription for the relief of a headache. Most of these women are profoundly ignorant of the possible results of an abortion especially as regards remote results. They do not know that pelvic inflammation in its manifold forms and results, are often caused by abortions, although many of them realize that their lives may be in danger from the immediate effects of that which they seek. I think, therefore, that the physician who is approached on this subject can do a great deal of good if he will sit down patiently and, with all the convincing force at his command, explain to his patient all these possible results, leaving the discussion of the moral aspect of the question to others if he so desires. The point is of such vital importance that I think it is a proper subject for discussion, everywhere and whenever an opportunity affords, until a sentiment against this crime shall have been created among the women of this country so that they will shun

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it as they would smallpox. When this point is reached there will be, in my judgment, far less necessity for specialists in diseases of women than exists at the present time.

Abortions, when they are produced with criminal intent, are usually done by men whose ignorance has relegated them to the rear ranks of the profession; consequently it is my opinion that the simplest rules of cleanliness are not observed. Perhaps the mouth of a cervical canal that is bathed in an acrid leucorrhœal discharge, is invaded by a dirty doctor with a dirty hand and a dirty catheter, that he has used last perhaps in a male urethra which was swarming with gonococci, and after its insertion in the uterine cavity with more or less destructive force, the whole vagina is plugged up with a dense tampon damming up the secretions, at the same time that he has provided an avenue that facilitates their absorption. This is, I believe, a not overdrawn picture of the average attempt at criminal abortion. Little wonder then that we have the sequelæ which we so commonly meet in general practice; no wonder that pelvic inflammation of all kinds, and their results, are found with such frequency. I believe that this class of troubles increase in direct ratio to the frequency of criminal abortion. I do not believe that a properly handled accidental abortion, nor abortions that are properly and scientifically produced when it is justifiable and necessary, are followed, as a rule by bad results, either immediate or remote. Out of 189 abortions of this character reported from Winckel's clinic in 1892, 84 per cent. recovered without accident or incident, four and one-tenth per cent. had severe hemorrhage, ten and seven-tenths per cent. had slight infection.

The management of those cases of abortion which do not come under the head of criminal is very simple. It is my practice to thoroughly sterilize my hands, and the vagina and the external genital region of my patient before doing anything else; if the examination shows that the case has progressed so far as to make its prevention doubtful or impossible (and it usually is by the time the physician reaches the case), the patient is placed in the Sims position, and after carefully sterilizing the vagina, it is carefully tamponed with one long strip of iodoform gauze, commencing by encircling the neck of the uterus with the gauze and continuing until the vagina is completely and tightly packed making it in this way practically hemorrhage proof. The stimulation given to the uterus by the presence of the gauze is usually enough, and the patient can be left with perfect safety, cautioning her of the pain which she will doubtless experience and which is necessary for the expulsion of the fœtus. At the next visit, twelve or twenty-four hours later, the entire ovum will usually be found on the tampon, on its removal; it having been expelled during your absence. Sometimes in weak patients or in those whom for some reason you suspect atony or faulty contractions, it may be well to administer some remedy which will assist or stimulate the expulsive effort. No remedy has succeeded in my hands for this purpose so well as the sulphate of cinchonidia which it is my custom to administer in ten grain doses every four or six hours for one day. This is about all the treatment that is necessary in this class of cases. Sometimes, for three or four days, or as soon as the discharge becomes offensive, it is well to administer a vaginal douche of

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sterilized water, in which some iodine or carbolic acid has been dissolved, twice a day; in septic cases, and all criminal abortions should be classed as septic, in order to be on the safe side, or if any part of the ovum is retained, the procedure must be different. The cervical canal should be thoroughly and immediately dilated and the uterine cavity emptied and thoroughly cleansed. If there has been partial expulsion of the uterine contents the dilation may be dispensed with; but the uterine cavity should always be explored to get a correct knowledge of the true condition. The safest and most satisfactory instrument that I have ever employed for this purpose is my index finger; you can always tell exactly where this instrument is, and just what it is doing. And the same instrument, under these circumstances, is one of the very best curettes that I have ever used. Manipulations of this kind must, of course, be done under strict aseptic conditions—anesthesia, and the whole hand introduced in the vagina, if necessary; although in many cases the uterus can be thoroughly explored by the ordinary bimanual method of examination. After the uterus has been thoroughly emptied its cavity should be washed out with some cleansing solution. For this purpose I have found sterilized water and iodine one of the best. I usually add two ounces of the tincture iodine to a gallon of water. The douche need not usually be repeated oftener than once in twelve hours and sometimes not repeated at all; each case being governed by its own requirements and the symptoms in this respect. If chills or elevated temperature indicate a continuance of septic absorption you may be sure that your curettage has not been thorough and should be repeated. The uterine douche may be required as often as once in six hours for the first twenty-four. Some physicians pack the uterine cavity in these cases with gauze, a proceeding with which I have had no experience, having never found it necessary.

Cases of abortion of whatever kind and from whatever cause, if seen early and managed on these or similar lines, usually terminate favorably; but in order to secure a favorable termination it is necessary that the physician should neglect no particulars, and should not be guilty either of the sins of omission or of commission. A recent and very excellent work on gynecology, in speaking of puerperal sepsis says: "Every woman who, after labor or miscarriage, has an elevation of temperature or a chill should have an antiseptic vaginal douche, and if after a short time her symptoms do not become markedly better the physician is committing an inexcusable blunder who does not curette the womb, irrigate its cavity, and render it as aseptic as possible." I believe that this paragraph is as applicable to septic abortions as to labor and miscarriage, except that in all cases of abortion where partial expulsion has occurred or septic symptoms have developed, the endometrium should be thoroughly curetted under an anesthetic, and the cavity thoroughly irrigated with an antiseptic fluid without waiting for any other symptoms.

DISCUSSION.

DR. SCHOOLER. *Mr. Presiden :*—I do not know that I want to discuss the paper particularly, but there are one or two things that I desire to call attention to, to show, perhaps, the popularity of criminal abortions.

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I do not see as many of these cases as I formerly did, being somewhat out of the line of that practice, but that they occur quite frequently I am fully aware of and it is sometimes almost epidemic; sometimes there won't be anybody come to my office for anything of that kind for two or three months perhaps, and then an epidemic will break out and, for a week or two, there will be apparently one every day and I believe, as performed by most specialists in that line—and every city of this size have some persons who make a specialty of that practice—that they are eminently successful. I do not know exactly what their methods are but, as a matter of course, they use some instruments, or packing the uterine cavity partially with gauze, introducingthe uterine probe or catheter, injecting water, air, or something of that character. I was told three or four days ago that there were two men in this city who had an instrument devised for the purpose; that they were here for the purpose of selling the instrument and the right of the State to use it. The instrument was described to me as consisting of a zinc and a copper plate and that they used a chemical for moistening the plate and putting them together. From the description I got of the instrument, the electric current that they were to produce by the use of the copper zinc plate was simply a blind and that it amounted to nothing, can be and of no use, but they have two rubber tubes with bulb or bellows, or air-pump or something, for the purpose of introducing air into the uterine cavity, and that one part was fitted so as to enter the uterine cavity and they injected the air and claimed that the electric current modified the air to such an extent that it was always aseptic and there was not any danger of producing an embolism, no danger of entering the fallopian tubes and passing into the abdominal cavity; that it produced no untoward effects. The electric part is simply a blind and the bellows are simply for injecting air or water into the cavity. Occasionally some of these persons have a death by abortion. I think every practitioner in this city who has any considerable amount of business can trace a few of them to these practitioners, where he has been consulted and, in a few days, see some other doctor's horse tied up before the premises and, in the course of another few days, see a funeral wending its way to the cemetery. A large number of women, however, in this city do not consult a physician; they consult some of their female friends, and I have seen catheters that have gone the rounds for several years in a circle of acquaintances. Some of them are rather expert in the use of those things on themselves and ontheir friends.

Abortions are not really so dangerous, I think, as they sometimes appear. When we see one case that does badly, either from accidental cause, or from criminal abortion, we are apt to say that the operation is attended with a great deal of danger; danger from hemorrhage, danger from sepsis and sometimes followed by abscess, but I think a little thought on the part of practitioners in this city over the number of cases that they have known to be produced directly by physicians, or indirectly by the operation produced on themselves or by another female, will convince them that it is, in the long run, a comparatively safe operation and, it is probable for that reason, that it is carried on to the extent that it is. If there were more cases resulted fatally it would, perhaps, be better for the community and many lives would be saved, but there are a great many

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that have no fear of it at all. They apply for abortion, as mentioned in Dr. Porterfield's paper, as a matter of course, just as much as if they were applying for a dose of pepsin for the stomach. They claim to be married women who have family enough, or some doctor in a retired part of the country has said if they ever give birth to another child they will die. They urge that as a cause for abortion and if you don't do it they go off and apply to a man in that line, or frequently by themselves.

DR. JACKSON. *Mr. President:*—Unfortunately I got in here in time to hear only the closing portion of the Doctor's paper. The question of abortion and the treatment of abortions, while they are well known, or should be, to the profession, they are not carried out through the country generally in a very thorough or scientific manner. The fact that nearly all—at least ninety per cent.—women abort at sometime or other is evidence that the thing is very common and, as the doctor said, it was not a dangerous operation, and some women become accustomed to it and cease to fear it. Not longer ago than last Monday I was called to see a woman who had had seven abortions and always before she had gotten along nicely. Upon this occasion I was called there and as soon as I had got into the room I discovered the odor was intense, the stench was intolerable. I introduced my finger and tore out a portion of the placenta that had been there for over a week and it was so offensive that it sickened me. The woman had a very severe septic manifestation, and yet she recovered, or is in the way of recovery; is now much better. I frequently meet men in the country who say, "Oh, it is not necessary to curette or even to introduce your finger in the majority of those cases of abortion, that they get along without it; that nature will absorb the placenta." This may be true in some instances if it is not too far along.

We have had in our place four deaths from abortion. One of them treated by a licentiate of the State Board of Health, and I am told—I did not see the woman—that when seen by one of our physicians of the place, that he could not stay in the room; that the placenta had been allowed to remain two weeks. She was in the fifth month, I think, and the placenta had remained there two weeks before she was seen. Those things frequently occur in the country and it is my opinion that it is absolutely necessary that in those cases prompt attention should be given to the removal of the secundines, and I think the Doctor is right when he says the finger is the proper thing to use.

DR. J. T. PRIESTLY. *Mr. President:*—I think this article of Dr. Porterfield's is a very pertinent one. There is no more common thing in our city than that of abortion. I don't know who it is done by, but it is done right along; by the people themselves, perhaps. I am very glad to hear him speak of the treatment of these cases, because I think it is very important that they should be treated properly. I think, if there has not been much dilatation in the first stage, that dilation is the proper thing and to promote and assist that condition nothing is better to use than idoform gauze; the pain comes on and the expulsion of the ovum takes place in the majority of cases, but you do not find fiftv, nor seventy per cent. lying loose on the iodoform gauze when you take it out. I think

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that part is overdrawn; the contractions very frequently bring it down so that they lie in the cervix, or cervical canal, and there they will stay and, in the majority of cases, you have to scoop it out with your finger. Now, in regard to emptying the uterus, I am, unfortunately, one of those gentlemen that have very short fingers and my finger will not reach to the top of the uterus, no matter whether I press the uterus down until it comes to the outside or not. I have fished, until I got tired, with my finger before I got all. I find it much better to introduce the sterilized douche-curette and, at the same time I loosen the mass from the uterine wall I wash it out. The flow goes through the curette and washes it out. It does not take five minutes to do it. In a majority of the cases I do not need any chloroform. If the os is patulous I simply slip a rubber coat or something of that nature under the patient and let her lie on it and curette the uterus at once. I can do the whole thing and be away in fifteen or twenty minutes, if I have been lucky enough to find some boiling water.

Now, in regard to gauze drainage. Oftentimes you are called into a case where you get septic trouble. I do not know how it is with others, but I find men who will tell you that the contents of the uterus has been entirely removed, but you will find there a diseased condition of the lining membrane of the uterus and you curette and curette, until you can curette that body all off and the hard, gritty feeling that you get from that is the guide that tells you when you have got the sloughing part removed. In these cases you take iodoform gauze and carry it through the internal os into the body of the uterus. It assists the drainage very nicely and the gauze can be left in twenty-four or forty-eight hours and then removed, and you will find the uterine walls nearly firm, the temperature going down and the case getting well.

In regard to the deaths that sometimes occur from air embolism, it has been my luck to see two cases of air embolism in cases where the parties had injected air into the uterus to produce an abortion. One was a young married woman who had taken her syringe and inserted the nozzle and pumped air into it with a bulb syringe and she was immediately taken with fainting. I happened to be driving along the street when they came out and hailed me. I went in and I never saw a person so near dying. The heart fluttered like a pigeon. The woman was pale and gasping for breath. I gave her a hypodermic injection of strychnine with nitro-glycerine, and finally she got a little better and in time got well. There is no doubt in my mind whatever but that she had an air embolism. This last year I was called in by the coroner to see a young woman who was found lying dead on the floor. Her husband had left the house at noon, I think it was, and when he came home in the evening he found the little child sitting up at the table in the high chair struggling and crying vigorously, and went to look for the mother and found her dead upstairs, and alongside her body laid an ordinary bulb syringe, the top of it covered with blood. On my autopsy we found the uterus contained a fœtus of about two months. Now, there is no doubt but that woman had taken the ordinary syringe and injected air and made an air embolism which had caused her instant death there and then. It made a very interesting case.

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DR. J. M. EMMERT. *Mr. President:*—There are just a few words that I want to say about this excellent paper and one thing that surprised me —I had not heard the paper read before I read it—was the doctor's not having used the gauze as a drainage. As Dr. Priestly says, there is nothing that will give us any more satisfaction after curetting the uterus than to put in iodoform gauze. I invariably do it, and I think it is the best kind of treatment. Another thing as regards the curetting, and that is that sometimes, when you curette a uterus you find in it a solid body, I might say. In other words, there is a small piece of placenta that the uterus has contracted down upon and hardened it until it is really like a little fibroid tumor lying loose in the uterus. Now, this happened to me once or twice where, after I had curetted and washed it out and supposed I had the uterus entirely clean but the septic symptoms kept going on. When I first found this condition I went back and gave the patient an anesthetic—by the way I always do it, unless the os is very patulous, because there is always more or less shock and considerable traumatism—I went back and gave the patient an anesthetic, introduced my hand in the vagina, my finger into the uterus and found this little solid body in the uterus. The curette had slipped all around it and would not pull it out and, as the doctor says in the paper, I think the finger is one of the best curettes, that is if there are any loose membranes, or anything of that kind in the uterus; you can always tell just exactly what you have there. I am unfortunate like Dr. Priestly—by the way a gentleman took me for Dr. Priestly recently and I feel very much complimented—that I have a hand that is short and chubby, not a good hand for curetting; but I want to say that, in all these cases after curetting and you find these symptoms going on the thing to do is to sterilize your hand and explore the uterus.

Now, I want to say one word about dilating the uterus. Unfortunately I had a bad accident—fortunately for the patient, she never knew I had brought her to the verge of the grave. I read a paper over at Omaha a short time ago on the question of curetting the uterus and the methods of doing it. I stated there that the dilating the os and curetting is sometimes a more important operation than that of opening the abdominal cavity, and then I had not met with an accident, but I had often seen where these accidents might occur, because I had read of them. Now, there is a great deal of danger in dilating the uterus. You take the large Goodell dilator and introduce it into the uterus and you get a powerful lever; you have got an instrument that, if you are not careful, you are liable to rupture the uterus. The case I had the accident in was in an adjoining town. I was called up and was told—in fact the physician told me—I should come prepared to curette a uterus. I went there and found a little Dane woman with all the evidence in the world of syphilis, and when I came to investigate the case I found she had had syphilis; was a syphilitic patient and I found that there was considerable degeneracy of the endometrium with an adherent uterus. Now, I want you to mark. the uterus adherent, fixed to the rectum, seemed to be firm. I had the doctor to give her the anesthetic and I took a Goodell dilator, found the uterus was turned back, followed the canal as well as I could. I was careful in dilating that uterus and I had no idea in the world I had done any harm

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when I got through with the dilating. When I introduced my curette I curetted around and struck the point anteriorly and thought I could not feel the body or walls of the uterus and kept going up and going up and pretty soon it struck me I had ruptured that uterus. I placed my hand over the abdomen and tilted the curette and could feel it right under my finger on the abdominal wall. I came pretty near having a chill. I came to the conclusion the patient would if I didn't. Of course, I made up my mind immediately. I said nothing to the doctor, or anybody else. I made up my mind if that patient went to glory I would be the only party who knew of it. If I had had her in the hospital, or anybody else had had her there, the thing to have done would have been to open the abdomen and remove the uterus. That would have been the proper procedure, but, of course, that was impossible. I immediately withdrew my instrument and did not attempt to wash it out or tampon thoroughly with iodoform gauze. I washed it out as thoroughly as I could and tamponed with iodoform gauze. I told the doctor I feared I had done a great deal of damage to that uterus and I wanted him to watch her close and send for me just as soon as he saw there was any evidence of peritonitis, but unfortunately I had to come to Des Moines—or fortunately, because I might have attempted to do something and the doctor did not do anything. The temperature ran up to 102. I told him that when these symptoms came on he should drain through the bowels and keep her perfectly quiet. The third day I went up and suggested that we had peritonitis, the temperature ran up to 102 and she had considerable pain, but the fifth day she was convalescent and continued to get along all right. Now, I think we can learn more from our failures or mistakes than from our successes. I thought I was careful in dilating this uterus and if I made any mistake I don't know just where I did make it, because I knew the condition of the uterus; knew it was bound down to the rectum. By the way, when curetting with the curette I could feel the walls of the uterus and that they were soft and flabby. I think it was the degenerated condition of the uterus from the syphilitic condition of the patient and the firm adhesions of the uterus to the rectum and altogether probably was the cause of the accident. I wanted to speak of this because it may save some of the rest of you from going through the mental anguish that I did for the three or four days following.

Dr. Priestly. *Mr. President:*—I would like to ask Dr. Emmert if he has not convicted himself without sufficient evidence? I have met gentlemen who have told me of cases and have seen several cases where the probe was stuck right through the wall of the uterus and no trouble followed. Owing to the patulous condition of the uterus, you oftentimes go right through it and feel the probe in the abdominal wall. Now, Dr. Emmert cites a case where he went through and felt the probe up against the wall of the abdomen. When not reflexed a uterus bound down is most apt to be found adhered to one of the edges of the covering. Now there might have been some things alongside that would show that he went through the wall, but I think, on his own statement, he has convicted himself without sufficient proof.

Dr. Emmert. *Mr. President:*—I have no desire to go any farther with the proof. I think the case will stand. I am ready to quit if the other party is.

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SECTION OF MENTAL AND NERVOUS DISEASES.

OUR NEURASTHENIC PATIENTS.

BY FREDERIC S. THOMAS, M. D., COUNCIL BLUFFS, IOWA.

In presenting a paper before this Society bearing the above title, I desire *not* to weary you by an exhaustive compilation from our text books on the subject of neurasthenia. This part of my subject may be left to others more competent. I do desire, however, to bring the victims of this disease—our patients suffering from nerve exhaustion—to your kindly notice.

Should I do this intelligently, I shall feel compensated for my effort.

I am satisfied that too many of our profession look upon this class of patients as hysterical or hypochondriacal, and get rid of them without giving them even a courteous hearing.

Is it strange that this large class should seek the services of itinerant quacks or irregular practitioners of medicine?

I can readily understand how the surgeon can be somewhat skeptical of every ailment that does not present a visible object for the operator's knife..

We do not wonder at the obstetrician, who depends largely upon his tactile sense for a diagnosis, to be a disbeliever in the "aches and pains" of his neurotic client. But to the general practitioner, whose whole study has not been confined along a narrow specialty would I appeal to give this class of patients a courteous hearing and a most searching investigation.

Let me introduce our subject by selecting three cases coming under my observation during the last summer. Case one. Mr. H., aged 44; for many years an active business man in an adjoining state. He made a change in his line of work that demanded more than usual anxiety, and many hours of close application.

The effort was too much for him, and he became a sufferer from nerve exhaustion.

He first consulted a homeopathist, who diagnosed "cerebral sclerosis," and gave the family the unpleasant prognosis of "ultimate loss of reason."

Case two. Mr. C., aged 51, an officer in the Revenue Marine Service. He was treated by the ship's physician for malaria for several months, and finally sent north on a "leave of absence."

Case three. Mr. D., aged 38, was seen by three most excellent practitioners of medicine. No two made the same diagnosis. One treated for malarial condition, another for an entero-colitic disease, the third for a biliary difficulty.

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In spite of the multiplicity of useless nostrums prescribed, he recovered, and to-day is enjoying a fair degree of health.

Should the writer stop here, without presenting an analysis of the cases just mentioned, he would be charged with the presumption of claiming infallibility as a diagnostician.

No. I, was a case of simple neurasthenia. The patient complained of weakness, both mental and physical. The least exertion was followed by nervous irritability and a fullness at the vertex. He was unable to exert those finer mental qualities which he had possessed in the past. In fact he suffered in the early part of the day with a peculiar feeling of dread, was apprehensive and suspicious. He knew there was no cause for such feelings, other than as a result of his nerve exhaustion. He suffered at times from intestinal indigestion, and occasionally from insomnia. His appetite was capricious. He was constantly talking of his ailments, criticising his own conduct, and was fully aware of his inability to lose sight of himself and interest himself in others. In fact, he said to me, that he was surprised how patiently I listened to his tale of woe.

He told me he had in the past ridiculed men for their morbid fears and hypochondriacal nonsense, but now he fully realized his own inability to calmly await a betterment in his own condition.

No trouble of a reflex character was found. The eyes, the kidneys, the naso-pharynx, the heart, the liver and the genitalia were examined, with negative results.

I prescribed absolute rest, mental and physical. Disinfected his bowels and increased their activity by a prescription containing salol and fl. ex. cascara. At the end of a month, sent him to a farm, with instructions to commune only with the domestic animals.

As is usual in cases of this kind, my instructions were violated, and our patient began working in the hay field. A fortunate run away and a fractured arm compelled rest, and he returned home quite well from his former trouble. He has since enjoyed a fair degree of health.

Case No. II. was a man of but little flesh, and no appreciable amount of adipose tissue. He presented nearly all of the symptoms of the first case. In addition, he presented a systematized delusion of persecution, but acknowledged that while he knew it was a delusion, yet he could not rid his mind of it. I placed him under the care of his son, who was a physician. Strychnia, arsenic and iron were prescribed. Bowels were kept open by salines. Sulfonal occasionally for his insomnia, combined with a small opiate. His diet was well looked after, and absolute rest enjoined. In three months he returned to his command. During the past winter he used cod liver oil. He writes me that he has had no return of his trouble.

Case No. III. presented some features not found in the others. The specific gravity of his urine varied from 1005 to 1026. Neither albumen nor sugar was found at any time. At times excessive urates or phosphates were found. At others, almost absence of anything except water.

This case was believed to have been aggravated by excessive venery. The bowels were quite stubborn, and some slight entero-colitis existed.

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Rest, with thorough washing of lower bowels, cascara, and suitable food, brought about a cessation of the nerve symptoms.

It is hardly necessary for me to enter into a discussion as to whether this condition, termed by Beard, Gray, Bremer, and others, as neurasthenia, be a morbid entity or not. Much as physicians disclaim the right of others to regard it as a disease, they will not deny that patients suffer from a certain condition, and that condition has been termed by leading medical authors and writers "neurasthenic."

We most not get the impression that this condition is only found among the wealthier class. We find the same condition of nervous prostration among the poor. Among the former, it is more easily recognized; among the latter, the terms biliousness, dyspepsia, and similar incongruities, are used to designate it.

It is but natural to ask, what are the causes that bring about the condition found in our neurasthenic patients?

Among the many theories advanced, none seems so plausible and easy to understand, as that given by Beard: "The disequilibration of waste and repair."

From a study of this subject, I am led to believe that in the whole range of medicine, nothing has been more clearly proven, either by clinical observation, or by post-mortem examination, than that the nervous system exerts a powerful control over muscular action. We observe that atrophy of muscle, as well as conversion of muscular tissue into fat, is caused from diseases of the nervous system; cutaneous eruptions, sloughs, ulcers, tumefactions of joints and serous effusions into and around them, trophic changes in bones leading to atrophy and fractures—all these likewise arise from disease of the nervous system.

The disease under consideration must be denominated a functional one. The pathological alterations are either cellular or vascular, in so slight a degree that their exact nature has not yet been determined. That the nervous system can itself be in an asthenic condition, produced by reflex, or by vascular disturbances, no one can deny.

The human cerebrum can become exhausted by excessive function. The sympathetic and the cerebro-spinal nervous system, can become asthenic in whole or in part. Precisely wherein this asthenia consists, what cellular alterations compose it, etc., is as yet an undetermined field of investigation.

In simple cases of melancholia, where there is a simple blunting of the emotions, with a tinge of depression, or perhaps a paralysis of energy, no student of medicine would doubt for one moment that there was a condition of disease. No pathological textural changes have been pointed out. The same must be said of periodic insanity, paranoia, primary dementia, hallucinatory insanity, the insanity of pubescence, and of the insanity of the puerperal condition.

Pathologists, who have taught us so much during the past twenty-five years, are inclined to sneer at the term functional diseases, and even deny their existence. It has been said that there can be no morbid manifestations, without a change in the material structure of the organs involved. Yet we must be fully convinced that these functional diseases mentioned

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in this article, although presenting no known primary anatomical changes, must be due to changes that are of a molecular nature.

What shall be the treatment for our neurasthenic patients?

On account of such marked change of temper found among this class of patients, we find their friends and members of their families entertaining a belief that many of their symptoms are merely imaginary.

Some have already formed the habit of being tireless medicine topers. Others will be found carrying about their persons some advertised fad, or perhaps drinking water containing Alaskan bees. In fact, the more absurd the thing used, the better.

Others will express their disgust for any remedial agent, and declare the science of medicine, and everyone connected with it, to be systematized frauds.

The first duty of the physician is to make a most careful examination of the patient, and thoroughly understand his physical condition.

He should inform his patient that he has been living beyond his income, physically considered. He should be informed that men can no more overdraw their vital bank account, without bankruptcy, than they could if it was but so many dollars and cents.

They should be taught to live from this time on, at a rate compatible with their normal capabilities.

They most forego a great many pleasures, abstain from many entertainments, and refrain from such articles of food as may stand between them and recovery.

These things must be impressed upon the minds of our patients so clearly, that they will take cognizance of them. Our patients must be instructed in a school of mental and physical hygiene.

The therapy suitable for our neurasthenic patients, must in each individual case be left to the judgment and skill of the physician in charge.

Dr. Bremer said, "there are many roads leading to Rome, likewise let it be said, there are as many leading to recovery from neurasthenia."

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MENTAL CRAMP.

BY GERSHOM H. HILL, M. D., INDEPENDENCE, IOWA.

Under this vague title I wish to describe and comment on two cases of nervousness which are on the border line of insanity.

Lucy M., born in Illinois, age 21, single, high school education, a member of the Episcopal church, by occupation a teacher. Father intemperate, mother recently died of consumption. She has a nervous temperament, her health has never been excellent; two years ago she had a bad cough, and pulmonary tuberculosis was suspected. Last year her health was fair and she taught a country school in a successful manner.

The first symptoms of mental derangement were noticed by the family with whom she boarded. At first she could not remember whether she had closed the shutters or door of the school house, and frequently walked back from her boarding place to try them. A little later she began to worry for fear she might have broken them, so another inspection would be necessary.

After giving up her work she continued to feel as though something strange was about to happen; feared that she or someone else would get into trouble on account of her carelessness. Desired to be locked in her room.

This young woman was admitted to the hospital for the insane at Independence in January, 1893, and placed in the best ward the institution affords. The mental trouble above described dated back about six months.

She was in tolerably good health, except that she was rather pale; she was suffering from nervous debility and slept poorly. She was conscious of the situation, had a correct realization of everything and controlled herself perfectly, but it seemed impossible for her to decide questions, even common and trivial ones, to the satisfaction of her own mind.

Although pure, well educated, refined and exceedingly amiable, she was excessively conscientious and worried lest she had all her life been laboring under a misapprehension of the teachings of the Bible.

The second case is that of N. V. S., a farmer's son, born in Iowa, and sixteen years of age. Before his birth two little sisters died, each after a short illness; this bereavement to his mother was so severe and prolonged that she felt obliged to move out of the house where the deaths occurred. The mother states further that she was unhappy and fretful before this son was born. This boy has always been indulged, and since his father died two years ago has followed his own inclinations in most respects. He has a cousin a few years older than himself who is partially insane.

At two years of age he disliked and was habitually harsh toward his infant brother; this inclination to annoy his only brother continues.

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Although the boy is well developed, fine looking and a good scholar, he has a nervous temperament and has always been peculiar.

One day about a year ago while his mother was absent from home he went to the store and bought a pocket knife. After keeping it an hour or two he returned to the store and received his money back again; this knife was bought three times that day and returned twice, but at night when his mother got home she prevented the boy from taking his purchase to the merchant a third time. Thereafter he would have nothing to do with the knife.

A few weeks later the mother noticed that this son began to repeat his acts; such as chores about the house. If he went to the pump and took a drink, he would immediately go through the motions of drinking a second time. If he was sent into the back yard to empty the slop pail he could not be persuaded to do anything else until he had made a second trip, going and returning exactly as he did the first time. In taking food he always took two articles of a kind; two pieces of meat or two potatoes; two pieces of bread or two pieces of butter. Since he consumed all he took he would refuse articles when two of a kind would be more than he could eat. Furthermore he insisted on having the same bill of fare for two meals in succession, then he was equally anxious to have a change. Last fall it was thought best to keep him out of school, but he was not inclined to do any kind of work and was unwilling to mind his mother. As cold weather came he got into the habit of occupying an easy chair in the sitting room. He made it a rule to be in this chair before the school bell began to ring, and to remain in it until the ringing ceased. The habit was not due to the fact that he studied at home and occupied this particular chair while engaged with his books; on the contrary he showed little inclination to read or to acquire knowledge, but rather to sit in idleness.

From month to month the boy became more peculiar and more headstrong. He would not permit his mother or his brother to go around the chair where he was sitting; they must go back across the room, either in front or back of him by retracing their steps. He undertook to compel them to practice unreasonable rules made by him; if they did not yield he would fly into a violent passion, becoming disorderly and unmanageable.

He was brought to the Hospital for the Insane at Independence for treatment on the 27th of February, 1894. This patient is still in the hospital; he enjoys good health, is growing rapidly, exhibits no marked peculiarities to the physicians, except that he is very quiet in manner, not talkative, nor inclined to do much work and is rather reluctant about minding his attendant. When his mother visits him she finds him still set in his opinions; if he receives oranges or bananas from her he takes two of a kind, or a multiple of that number. He will not go out to walk with her unless they can return by the same route. The patient tells his mother that it makes him hot in his body and causes distress in his head if he does not follow his own peculiar rules. But he has never given any reason for his strange conduct, and he does not seem to have any delusions or hallucinations.

The explanation made to his mother for not acting in the hospital as he does at home is the fact that he must do as he is told to and conform

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to the usages of the institution. At home, or when not in the care of an attendant he *feels* obliged to ride his hobby, but at the hospital he does not *feel* uncomfortable when he disregards his peculiar notions.

In the first case described the patient could not get rid of the *feeling* that she was constantly making mistakes and that she was thus getting herself and others into trouble. In the second case the boy *felt* obliged to do everything twice, to retrace his steps, to appropriate food, by taking either two or four, or no articles of a kind. This morbid bent of mind became so extreme and so imperative that it was unsafe for him to remain at home.

If for convenience, we divide the mental faculties into the intellectual, the emotional, and volitional, it seems that in this disease the emotional centers dominate the whole mind. If the mind is sound the reasoning faculties control the feelings and the will. By our own reasons or the opinions of other persons we are able to recognize illusions, delusions and hallucinations as such if our minds are sound. The kindling or depressing of the emotional nature by the ups and downs in life is also kept within the normal limits by the thinking faculties. No doubt in some instances the irresistible propensity to commit suicide may be attributed to a sort of mental cramp. This mental condition is not unlike that of the inebriate in whom the intellectual faculties are not lost or greatly alienated, but held in abeyance.

Various kinds of morbid feeling experienced by persons whose minds are naturally weak, or by persons whose minds are ordinarily strong, but who are temporarily out of health, might be described in this connection, but time will not permit.

An hereditary defect in the nervous system is oftenest the cause of mental cramp. An anæmic condition of the brain, or a neurasthenic state of the nervous system may produce this frame of mind. The brain centers of thought may be irritated either directly or by reflex action so that they are unable to perform their functions equally and harmoniously.

Mr. Herbert Spencer says that "in the exercise of brain functions, lines of least resistance are gradually formed for nervous action by the repeated flow of energy in definite directions." For this reason it is easy to do routine work. Almost unconsciously we continue to perform what we are in the habit of doing. On the contrary, strong minds are taxed when they undertake to break old habits and establish new ones. It is hard for an old man to repent of his sins and begin a new life. Since man, like the lower animals, is a creature of habit, he should, especially in the developmental stages of life be careful not to form injurious habits; on the contrary he should persevere in the establishment of good habits. When however an abnormal, an unusual habit takes possession of the life of an individual then it is probable that the nervous system is in a morbid condition, or that some organic disease is present, requiring the attention of a physician. I can only say that the medical treatment in such cases may be based on general principles.

In order to make a prognosis in this form of morbidness of the mind heredity, imperfect development, the age of the patient, the duration of

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the derangement and the gravity of the symptoms should be considered. If the cause can be thoroughly removed the effect will probably disappear.

In 1888 Dr. Edward Cowles of Boston contributed an article to the *American Journal of Psychology* on this subject, which he names "insistent ideas." This condition has also been called that of "fixed ideas." A somewhat similar mental state is characterized as "imperative concepts."

Stearnes in his new book on Mental Diseases devotes a chapter to this subject. He says: "There are innumerable forms which these insistent ideas may assume. Individuals sometimes come to doubt their own existence and that of the universe about them."

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CASTRATION AS A TREATMENT FOR INSANITY.

BY C. A. LEECH, M. D., KEOKUK, IOWA.

As our population increases, so it seems that insanity in many of its various forms keeps pace with such increase. We do not take up any of our daily newspapers, that we do not see one or more accounts of murder and suicide, caused by temporary insanity.

Our county poor-houses are being pretty well filled up with "incurables". Some are harmless, in fact most of them are, yet some are violent and have to be confined in a strong cell.

In the Lee County poor house, to which I am one of the physicians, there are some eighty-three inmates, and most of them are, if not insane, feeble-minded, and the majority are females.

Now the question which I desire to introduce before this association, and which I would like to have thoroughly discussed, is the cause, in a majority of these cases, and the benefit if not cure in many of them by the treatment referred to, to wit: castration. Having been a practicing physician for the past eighteen years, many cases of "cranks" if you please have come under my observation. I wish to give my views as to the exciting cause and I expect to be severely criticised, but I believe and am conscientious in what I am going to say.

In the first place let us look a little into the anatomy of the nervous system.

First we have the brain, and connected thereto the spinal cord, which gives origin to the nerve filaments or plexuses, and from the plexuses the different nerve trunks and branches, ramifying to the different organs of the body are connected with the nerve center, the brain. Take the eighth or cervical, it has its origin in the cord, its function is motion and sensation, and is distributed to the trunk and upper extremities, and is divided into the anterior and posterior divisions; the anterior communicating to the pneumogastric and sympathetic. Next the gastric; its origin is the pneumogastric and is distributed to the stomach.

Next the genito-crural, its origin is from the second lumbar and is distributed to the cremaster muscle and thigh. Then the illio-hypogastric, its origin is from the first lumbar and is distributed to the abdominal and gluteal regions. Next the splanchnic (great) has its origin from the thoracic ganglia, and is distributed to the semilunar ganglion, renal and supra-renal ganglia.

And now we come to the great sympathetic, which is distributed to all the viscera, and this brings me to the point which I wish to make, namely, that the operation of castration in the male and ovariotomy in the female would (if not cure) relieve many cases of so called insanity. There is not one here present who would for a minute deny there is such a

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thing as reflexes or reflex action, and how is this reflex caused or communicated? Why, through that great electric system known as the great sympathetic nerve. We find women, who are temporarily insane every month or during the catamenial period. This is due to reflex action.

Now my theory, based on personal observation, is that insanity is sometimes caused by reflex action, both in the male and female. For instance, take a case like this: A patient comes to us for treatment for "bladder trouble". We examine him and find a condition of acute cystitis, we put him on treatment for that, and he begins to feel some better, and neglects to continue treatment until he is cured. Now it becomes chronic and the kidneys become involved, also the spermatic cords, and we have an orchitis consequent on the irritation (here we have the reflex again in full force.

Now through our great sympathetic nerve we have this reflex communicated to the cord and through the cord the brain is made aware of something wrong. This condition of things goes on until we notice that the patient is irritable, his memory begins to fail and softening of the brain is the final result.

I have a case in mind where this is the history: In the first place the man had an injury to the left testicle, resulting in orchitis, and epididimitis, and following this acute cystitis and nephritis. The patient got better of these acute symptoms and supposed he was cured, but later contracted a hard cold and having over exerted himself, brought on as he supposed another attack of kidney trouble. This became chronic, and he used all the remedies that any one would recommend and became gradually worse as the years rolled round until he began to be forgetful, irritable and finally lost his mind altogether; in fact became insane and after two years died. The autopsy revealed hypertrophy of the walls of the bladder, and atrophy of the testicles, the kidneys were both involved; fatty degeneration and absorption of the supra renal capsules. This case was of long standing, extending over ten or twelve years. Could not this condition have been prevented by the removal of the testicle that was injured? Does not the autopsy held on the insane reveal (in a majority of cases) "Atrophic Softening of the Brain"? Wm. Aitkin says in his pathology of "White Softening": "The subjects of white softening are usually of advanced age, suffering from renal or cardiac disease, etc.," and again in Atrophy of the Brain: "After the development of the brain is complete, atrophy may set in primarily as *senile marasmus* or it may be the result of exhausting and wasting diseases". If this be accepted as the true pathological condition, does not my theory of urinary diseases, being the exciting cause of insanity, hold good, and is it not the well known fact that renal and bladder diseases are caused if not directly, indirectly by some morbid condition of the genital organs?

I do not think or claim that castration would benefit or cure hereditary insanity, but it would prevent the propagation of it.

In the majority of the cases that I have seen there is almost constant desire for sexual intercourse, or else masturbation is practiced, and the history as well as I can get it from relatives and friends is universally, that the patient first had some kidney or bladder trouble. Some few have had

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a gonorrhœa and orchitis, some stricture and some are the victims of masturbation. In these cases by removing the cause we can cure or at least treat the case successfully. In regard to ovariotomy we all know that a sound healthy woman is the exception and not the rule in these days of fast living, early marriages and prolific breeding. We have grandmothers almost before they should be mothers. The style of dress, lack of healthful exercise and food brings not only the young married woman but the young girl to the physician's office for treatment for "female weakness, falling of the womb, etc."

Now if ovariotomy is performed and the change of life be brought around (I mean in these obstinate cases) may we not by this means prevent the worse calamity, dethronement of reason?

Is not satyriasis one form of insanity? You say yes, but we can relieve this condition by the use of sedatives and hypnotics. Yes, so we can temporarily, and after a while the patient will begin to fail both in body and mind and possibly become an incurable insane patient. Now would not castration work a cure in this case if taken in time, and so relieve the man that he could pass his last days in peace and quietness. Would not the end justify the means? In cases of hereditary insanity the castration of children I believe would be beneficial in that the breed would no longer be propagated, but would it be beneficial in traumatic cases?

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A CASE OF APHASIA.

BY D. W. WICK, M. D., CEDAR FALLS, IOWA.

I present this most interesting case because of its great interest and importance as a pathological study, and as one illustrating the localization of brain diseases.

S. R. G., aet. 60—married. Native of Massachusetts. Both parents lived to be over eighty. Had five sisters and two brothers; all living and enjoying good health. The patient has no heart or kidney trouble; he is a contractor and builder, and has always been well until the present attack, except a severe sickness of typhoid fever many years ago. On the morning of Sept. 9th, last, while at work at his trade he suddenly lost the sight of left eye, and felt a slight pain in left temple. He immediately came to my office. Upon close examination of patient I could not note anything abnormal in his condition, except loss of sight in left eye, and a somewhat excited nervousness. I gave him 15 gr. of Brom. Potass., and sent him home and advised him to lie down and apply cold to head, and I would see him in a few hours. In three hours I found him in a stupid, listless condition, responding slowly and indefinitely to questions, and still complaining of more severe pain in left temple. He was sick at stomach and had attempted, several times, to vomit. He soon took on a semi-comatose condition, and remained so for three days and nights, voiding his urine involuntarily in bed. After this he became restless and uneasy, but still unconscious; wanted to get up. Kept right hand moving or jerking; this exciting stage continued two days and nights, during which time he only slept from effects of large doses of sulfonal. During thirty-six hours of restful sleep he began to show signs of consciousness, and attempted to speak, though in a disconnected manner. He began to take food and slowly gained strength, but could not make his wants known with words. He did not have hemiplegia nor paralysis of the muscles of the face, tongue or other muscles used in speech. The aphasia seemed to be of amnesic type—loss of memory of words. He could not utter them at will in coversation. He apprehends what is said to him, but was, and is yet, unable to convey thought by means of spoken words, or written language; certain words or expressions are used in a peculiarly automatic way in reply to any question asked. He would and does yet, use some absurdly irrelevant phrases as an answer to any question—as an example, to many questions he will say: "The sixth of it." He has much tenderness over region of left temple; has regained sight of left eye; sleeps and eats heartily, and has gained flesh. On January 29th, he had a similar attack—became much prostrated, slow pulse. Seemed to lose consciousness for a time—right hand and arm showed spasmodic jerking. Another attack on April 4th. The muscles

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of hand and arm of right side contracted and drew the arm back; muscles of back of neck were also contracted, drawing his head back. A third attack on April 20th, in which he became much prostrated—slow pulse, great depression and difficult respiration. He soon recovered from this and was up the next day, and has seemed quite well since except the slight pain in left temple.

Aphasia is an impairment of the idea of language or its expression, and is of two kinds: Amnesic, in which the memory of words is more or less effaced, and motor or ataxic variety, in which the memory is perfect but the subject cannot properly pronounce words from an inability to perfectly co-ordinate the muscles concerned in articulation.

Raney says: "We owe to Broca the credit of the discovery that the centre for the co-ordination of the movements of the tongue, lips and palate, necessary to articulate speech could be located in the posterior portion, or base of the third frontal convolution."

Now, in this patient we locate the lesion in region of left temple because of the pain and tenderness here; but just what the lesion is, and just exactly where located is not so readily analyzed. Whether an embolus, a tumor, a ruptured vessel, an atheromatous condition of the blood vessels, or cerebral softening. If from an embolus there should have been sudden aphasia and hemiplegia, and the seat of the embolism is in the middle cerebral artery of the left side. If from tumor he would have had severe and persistent pain of a more or less localized type, convulsions, etc. If atheroma, impaired nutrition and rings of ossification in superficial vessels would have been noted. If cerebral softening, impairment of mental faculties would have been present early. The treatment given patient was bromide and ergot during the first two weeks of his sickness, after which it was alteratives and tonics—using the one a week or ten days, and then the other. Dr. Hill of the Iowa Hospital for Insane saw the patient a few weeks ago in consultation, and is of the opinion that the case is due to embolism or a tumor, and his prognosis is unfavorable.

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SECTION OF SURGERY.

SOME STUDIES IN BRAIN SURGERY.

BY D. S. FAIRCHILD, M. D., CLINTON, IOWA.

The title given my Report is more comprehensive than the paper itself. I have not undertaken to review the work done in brain surgery during the year or any other period of time, but have confined myself to some practical observations in relation to the surgical treatment of intra-cranial hemorrhage, particularly hemorrhage due to trauma.

The views presented may appear somewhat radical, but no more so than the facts at our disposal seem to warrant. The difficulties in making an absolutely correct diagnosis are so great that in carrying out the propositions set forth may result in an occasionally unnecessary operation, but in my opinion this is less serious taken altogether than the expectant treatment which is so often employed. If this is an objection it will hold equally in many other surgical procedures which are employed to relieve grave conditions where an accurate diagnosis is impossible.

As an introduction I will relate a recent case which came under my observation and which together with other experiences of a similar nature during the past two years has suggested this discussion.

F. M., a brakeman in the employ of the Chicago & Northwestern Railway, was injured at West Side, Tuesday night, June 27, 1893. M. went out on top of the train to set brakes, and not returning in a reasonable time the conductor went out to see what had become of him. M. was found lying unconscious on top of the car near the edge of the roof. He was taken to Carroll and then to Boone. Wednesday he was brought to Ames by Dr. Deering. I saw the injured man Thursday morning and found him still unconscious. On examination I found no paralysis, pupils normal and responded well to light. There were no cuts or bruises on the scalp and only a slight tumefaction could be discovered, over the frontal bone just back of the anterior border of hairy scalp and about one inch below the middle line of skull on right side. The tumefaction was slight and could easily have been overlooked.

The long continued unconsciousness and the absence of motor paralysis indicated pressure anterior to motor area. I advised an exploratory operation with the view of determining the exact nature of the difficulty. The proposition was accepted and preparations were at once made for an aseptic operation. The scalp was carefully shaved, the surface thoroughly scrubbed with soap and water and then with ether and finally with bichloride 1-500 and the head enveloped in a sterilized towel, chloroform was administered by Dr. Richmond, and assisted by Drs. Deering and

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Merryman, I made a horseshoe shaped flap with the apex looking downwards including the area of tumefaction; by this means the skull was exposed over an area of two inches in diameter. No evidence of fracture or depression was discovered. A trephine three-fourths inch in diameter was applied and a button of bone removed. A clot of blood was discovered resting on the dura mater. The opening was enlarged by the free use of a chisel to the extent of one and one-half inches in width by two and one-half inches in length. On extending the opening upwards I soon found a fracture with only slight displacement. The fracture was three inches in length extending in a linear direction along the parietal eminence and terminating in a stellar manner in the frontal bone. One and one-fourth inches of the fracture was in the parietal and one and three-fourths inches in the frontal bone. The hemorrhage was from a branch of the middle meningeal artery and the clot covered an area of about three inches in diameter. The clot was quite firm and was removed with some difficulty. The greatest pressure was exerted upon the frontal convolutions, the motor area suffering but slightly. The fracture was found three-fourths of an inch above the trephine opening, and discovered only on enlarging of the opening. After the clot was removed the flap which extended well on to the forehead was replaced and stitched with fine silk except at the posterior angle where a rubber drainage tube was introduced and allowed to rest on the dura mater, extending to the anterior extremity of the opening in the skull.

A small amount of bloody serum escaped from the drainage tube for a few days when the tube was removed. The flaps united by first intention except at the point of drainage which closed a few days later by granulation, no pus formed during the entire course of the case. Consciousness began to return on the third day and slowly progressed to the complete restoration of the mental faculties. The patient after complete recovery was unable to give an account of the accident.

This case illustrates the importance of an exploratory operation in cases of severe cranial injury even if no external wound is discovered. Numerous cases are on record in which fractures of the skull have been found where no external evidence of injury was discovered.

When a blow has been received on the bony sphere to which the skull may be compared, a degree of flattening may occur by which the diameter in the line of the force may be slightly lessened and the tissue break at some point of least resistence; that point may be at the place of impact or at a point more or less distant; most frequently at the point of injury and next in frequency on the opposite side.

It is quite impossible to determine the degree of force necessary to produce a fracture of the skull, for there appears to be a wide range of difference in the resistance offered. In cases of great thickness of bone with a fair amount of organic matter, a blow of great violence may be necessary. In thin and fragile bones a force or blow insufficient to leave a mark on the surface may produce a fracture with a rupture of a branch of a meningeal artery, hemorrhage and death. In a certain proportion of cases the fracture will be simply a linear fissure or crack without displacement or so slight as not to be recognized by ordinary surface examination.

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While we may lay it down as an unvarying rule that we should operate in all cases of fracture with depression whether the patient is unconscious or not, and operate without delay and a more conservative procedure will govern us in other cases of injury. In cases of cerebral hemorrhage probably arising from the middle meningeal artery if the mark of injury indicates the location of the intra-cranial lesion we should operate with a view of securing the bleeding vessel, even if no evidence of fracture exists, for as we have already seen, a fracture may exist without external evidence of it, or a rupture of the artery may occur without fracture or apparent displacement. In a case of cranial injury, if the patient is immediately unconscious and if in an hour or two consciousness returns to be followed by increasing stupor, or if the patient is overcome by stupor after fifteen minutes to two hours, it is almost certain that an intra-cranial hemorrhage exists. In other cases if the unconsciousness, which is the immediate result of the blow, persists, its long continuance is legitimate evidence of hemorrhage. In these cases, if the evidence of injury is found over the anterior portion of the parietal or temporal bones, or over the frontal bone, it is our duty to make an exploratory opening with the view of securing the ruptured artery, which is probably some branch of the middle meningeal. In rupture of branches of this vessel the symptoms will be pressure symptoms of a general character, attended with unconsciousness on account of the pressure on the frontal lobe with, in many cases, dilatation of the pupil on that side. The symptoms of hemiplegia will depend upon whether or not the clot extends into the motor area. If the hemorrhage continues the fact will be indicated by progressive paralysis, due to the widening of the area of pressure. In injuries inflicted directly over the motor area near the fissure of Rolando, in addition to unconsciousness, hemiplegia, involving the opposite side of the body, will be an invariable symptom. Consciousness may return but the paralysis will remain and if the lesion is on the left side there will be aphasia in the vast majority of the cases. While it is true that if the clot is small it may be absorbed, the fact cannot be determined with certainty, and if it is not, irreparable damage will result. If the hemorrhage is well back under the posterior portion of parietal bone or under the occipital bone sensation will be impaired or lost upon the opposite and hemianopsia or complete or total blindness may follow if the intellectual centers of vision are involved. Sub-dural hemorrhage of traumatic origin due to the rupture of some branch of the middle cerebral artery is usually associated with fracture of the skull. The symptoms will often be more definitely localized in character, particularly if the hemorrhage is from branches of the third division which pass along the fissure of Rolando, although in the majority of cases it is impossible to distinguish sub-dural from extra-dural hemorrhage.

In cases of hemorrhage into the brain substance, including the internal capsule, the symptoms will resemble those of apoplexy. In these cases the traumatism will be so severe as to place the case beyond the reach of surgical means. In cases of intra-cranial hemorrhage the injured vessels will not always be found on the side of the head presenting the local evidence of injury; therefore, when the symptoms are inconsistent with the physiological activities of the portion of the brain lying under the seat of

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injury, we shall be governed by the localizing symptoms in our operative procedures. Fractures of the skull, for the purposes of this discussion, may be divided somewhat after Wythe, as follows:

1st. Fractures caused by direct violence and the lesion resulting immediately beneath the point struck. 2d. Fractures caused by indirect violence where the fracture is found directly opposite the point struck.

In cases included in these divisions, when the evidence of the fracture can be readily discovered from a surface examination, there can be no deviation from the rule that surgical procedures should be at once resorted to for the purpose of elevating the depressed bone; not only this, but means should be employed to ascertain if a clot of blood from a branch of the middle meningeal does not press on the brain. In certain cases the evidence of fracture will not be found on surface examination, however carefully made and hence the rule which governs the surgeon in well ascertained fractures should be extended. When it is known that violence has been applied and unconciousness persists beyond the usual time for a simple cerebral concussion, or comes on some time after the injury and the point of the application of force can be determined by cut, bruise or tumefaction of the scalp, the skull should be trephined at this point if the localization of symptoms does not indicate a brain lesion at some other point. If the above localization symptoms do not exist and no fracture is found at the point of injury after exploring the skull, an exploratory opening should be made and if there is still no evidence of fracture or hemorrhage the same procedure should be employed on the opposite side, if possible.

It is a well-known fact that intra-cranial hemorrhages, as well as fractures accompanied with but slight displacement attended with prolonged unconsciousness are sometimes followed by recovery and without any serious after-results, but this is not a safe experience to be governed by. In a certain number, constituting a considerable percentage of cases, the return of consciousness is followed, sooner or later, by serious mental disturbances, either an early improvement of intellect or by subsequent evidence of irritative lesions in tne form of Jacksonian epilepsy. The appearance of delayed symptoms are very frequently associated with organic changes which a late operation will not relieve and our patient becomes a chronic epileptic from causes which might have been removed by early operative procedures.

These cases possess great medico-legal interest to corporations. Assuming that the corporation is liable for the accident and the surgeon having charge of the case fails to recognize the nature of the difficulty and treats it on the expectant plan, not taking the proper method of determining the exact condition of the skull through fear of undertaking what may appear to him to be a formidable operation, or taking too much for granted, hoping that notwithstanding the gravity of the symptoms the difficulty will clear up. If, therefore, the case terminates unfavorably in the immediate results or in the remote effects, there can be no doubt as to the effects of this kind of treatment on the finances of the company. It is clearly the duty of the surgeon, if he feels that his experience and practice in this class of injuries does not enable him to determine with reasonable certainty the exact condition of his patient and he does not feel equal to the operative

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requirements of a surgical investigation of his case, to call some one of larger experience to aid him. It is also the duty of the corporation represented by the inexperienced surgeon, to require, in their own interests and in the interests of the person injured by them, the addition of an experienced surgeon to determine the course of procedure.

These cases have an important medico-legal bearing in criminal processes. The law provides that a man shall be held responsible for the effects of violence, whether the violent act is committed with intent to kill or do great bodily injury or not, provided the act is a wrongful one; nor does the law excuse the perpetrator of the wrongful act if it is shown that the violence committed is slight. Numerous cases are reported where, from comparatively slight injuries, unconsciousness has rapidly, or after a longer period, supervened, followed by death, and a post-mortem examination has revealed a rupture of a branch of the middle meningeal artery, brain pressure, with the fatal result. In these cases, where the violence has been comparatively slight, there may be no external evidence of fracture or even of marked external sign of injury, hence the surgeon may have no other guide than the history of a blow and the symptoms which have followed it. In a case like this the giver of the blow may, under the law, receive punishment much in excess of his deserts. The surgeon in the case, as above indicated, carries the double responsibility of the life which may be saved and the interests of the probable defendant in a criminal action and upon the surgeon's prompt action may depend the vital interests of two human beings.

I would not undertake to say what proportion of cases, or how many, may be saved by immediate operative procedures, but I believe that the time is near at hand, if it has not already come, when the physician or surgeon will, in all cases, feel himself called upon to consider the surgical necessities of the case without delay and not trust to the effects of time, Providence or any other means than his own or his associate's diagnostic and surgical skill. I am conscious of no greater satisfaction to the surgeon than the consciousness that by prompt action he has saved two individuals from a very great misfortune. The fear of increasing the danger to the parties most concerned ought not to enter his mind, for the surgeon should realize that by a proper observance of the rules already established in brain surgery, a trephining operation involves but comparatively slight risk, so slight, indeed, that it can weigh but little in comparison with the condition which the operation is intended to relieve.

It may not be proper to formulate rules for the absolute guidance of the medical attendant who may be called upon to offer aid or counsel in a case of cranial injury, but we have no hesitation in calling attention to the proposition that he should be guided by the general rules which obtain in injuries to other parts. No surgeon would feel himself excused for not opening the abdomen in a case of injury involving symptoms of rupture of a kidney, bladder or intestine, for while his well-directed efforts may not save the patient's life, he has the consciousness of having employed the well recognized modern surgical expedients to save his patient, and the surgeon of to-day can no more excuse himself for not having regarded the

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cranial cavity in the same light, from a surgical standpoint, that he does the abdominal cavity.

It is not claimed that in every case of unconsciousness following an injury with suspected hemorrhage a trephining operation should be done. In some cases, if there are no external evidences of injury and there are no localizing brain symptoms present, it would be quite impossible to determine the location of the hemorrhage and the chances of finding the clot would be small; this would constitute a contra-indication to an operation. The hemorrhage may be at the base of the brain or deep in its substance; or, if the localizing symptoms involve cranial nerves, indicating that the seat of hemorrhage was quite beyond our reach, no operation should be undertaken. The contention for an operation is in cases where the external mark of injury or the localizing symptoms are definite and the probable hemorrhage is within reach, although an operation might prove to the contrary and involve the necessity of extending the procedure.

In non-traumatic cerebral hemorrhage operative procedures have but a limited scope. The conditions which give rise to them are such as to lead us to hope for but little in this direction, involving, as they do, secondary changes in the vascular tunics. Non-traumatic hemorrhages usually occur in persons advanced in years—in persons whose arteries have undergone atheromatous changes or developed miliary aneurisms, or if the cases occur in younger individuals they are often associated with Bright's disease or some constitutional disease which has induced chronic degenerative changes in the arteries—the facts are of such a nature as to lead us to expect but little from the efforts of the surgeon.

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TREPHINING FOR EPILEPSY.

BY T. J. MAXWELL, M. D., KEOKUK, IOWA,

Cerebral surgery is just emerging from crudity into the light of rational and useful and practical surgery. We will report two cases touching upon one phase of cerebral surgery: that for the cure or amelioration of epilepsy—antiseptics and cerebral localization, has enabled us to venture into regions hitherto considered and respected as "*a terra incognita*."

Miss Olive M. Young, of Quincy, Ill., age 24 years. In her thirteenth year had her first attack of fully developed epilepsy or "*grand mal.*" About one year previous to this fully formed attack, she began to suffer from twitchings in the index finger of left hand, which soon assumed the form of forcible flexion. This motor disturbance gradually spread to the other fingers of the left hand, continuing to involve other groups of muscles, arm, forearm, shoulder, neck and face, extending downward to thigh and leg of left side; finally passing over to right side when she would lose consciousness and fall over with general clonic convulsive movements. During these general convulsive movements her head was drawn to the left side and she would froth at the mouth and often bite her tongue. She has continued having these attacks at irregular intervals ever since they first began. During the first years there was one intermission during which she was free from an attack for six months. Of late she has had them more frequently, never being more than one or two weeks without. Other times one attack would follow in quick succession, having three or four attacks daily. There is no history of injury of any kind during infancy or childhood. She is more liable to have paroxysms during menstrual periods, which are somewhat irregular and painful. She is always able to call for assistance or put herself in a position where she will not be injured, as the attacks are always introduced by the signal symptom of contraction of the index finger of left hand and spread slowly to the different groups of muscles of the left side before passing over to the right side, when she loses consciousness and convulsion becomes general. She has been treated with the bromides and every other medicine known or thought to be useful, without benefit. She, with her mother, applied to me for relief by way of surgical operation. I could give but little encouragement to the girl, but presented the case about as follows: That I had operated on two cases of traumatic epilepsy with complete cure of one, and in the other with great amelioration and improvement. But as there was no history of injury in her case it differed from those named; yet being a case of pure Jacksonian epilepsy with a definite *signal* symptom always present, there was no trouble to locate the point where these nervous cyclones were generated and from which the explosive energy spread to all the motor areas of the brain. That an operation properly conducted

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involved but little danger, and there was a possibility of benefit, or even cure, for otherwise a hopeless case. With this presentation the operation was determind upon. Patient was first prepared by shaving the head, then it was scrubbed with soap and hot water. Ether was used to dissolve and remove the sebaceous matter harboring microbes. The head was enveloped in a compress wet with a solution of corrosive sublimate, for several hours before operation. By means of a Harsley's cyrtometer the Sylvian and Rolando fissures were located and marked on the scalp by means of an aniline pencil. The motor center for the hand was determined as nearly as possible, and marked on the skull by piercing the scalp and boring into the bone with a small bone drill. This procedure is necessary in order to retain the topography after the scalp flap has been lifted. Chloroform was the anæsthetic used. The operation was performed at St. Joseph Hospital on the 25th of November, 1893, as a clinic before the students of the Keokuk Medical College. A horse-shoe shaped flap of scalp about three and a half inches in diameter, including all the soft parts except periosteum, was lifted. The base of the flap was below so as to secure blood supply. The patient was placed in a *semi-recumbent position*, in order to diminish hemorrhage. I have in other cases used an Esmarck's constricting band around the head for the same purpose. The only drawback or objection to this band is that it is in the way of the operator. A button of bone one and one-half inches in diameter was removed. There was some delay and difficulty encountered on account of the preternatural thickness of the bone and the breaking of the trephine. There was nothing abnormal observed in the appearance of the dura and the brain pulsating beneath it. The dura was incised for about three-fourths of the circumference of the opening. The incision was made about three-sixteenths of an inch within the bony opening so as to enable me to suture *in situ* again. The flap of dura being turned back, a sulcus known to be Rolando's fissure was observed to pass from above downward and forward through the anterior field of exposure. Just back of it a prominent convolution running in the same direction, which we took to be the ascending parietal (posterior central). A Faradic battery had been prepared with two copper wires tipping the poles. These wires were insulated and arranged parallel with the points about one-fourth of an inch apart. A mild current was then turned on and the points applied to the brain. The effects were closely and anxiously watched. Presently we had the "*signal symptom*," the flexion of the index finger of the left hand. The wires being kept in contact the muscular contractions spread to other groups of muscles of left arm, neck, face, leg and to some on right side, when the contact was broken to prevent a general epileptic convulsion. This irritable area was found to be on the ascending parietal (posterior central) convolution. I removed by incision at this point a portion of the convolution to about the extent of one-half an inch square, superficies, and in depth one-third of an inch. The dura was sutured with catgut. The button of bone was not replaced. Scalp sutured with silkworm gut, dusted with iodoform and dressed with gauze and cotton, secured by bandage. The next day the dressings were removed as they were somewhat stained, new dressing applied and left on

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without change for ten days. When removed wound was healed; sutures were then removed. The recovery was uneventful and without any febrile reaction. The next day after operation it was found that the patient could not flex the index finger of left hand; that function has been to a great extent restored since operation. The patient was completely free from all symptoms of epilepsy for ten weeks after operation, though she has suffered from two slight attacks since.

Case II.—R. R. Turnbull, of Packwood, Iowa, age 32. When about 10 years of age was struck upon the back of the head with an axe, leaving a depressed fracture of the skull—site of wound midway between external occipital protuberance and parietal eminence on right parietal bone. The injury was looked upon as merely a scalp wound; it bled freely but nothing was thought of it at the time; no physician was called; the cut soon healed. Has suffered with headache for the past ten years—especially during hot weather and daytime. About twelve years ago was overcome with heat but did not lose consciousness. The pain in head was frequently of a burning nature, radiating from occiput through cicatrix of scalp wound to right temple. In September, 1891, while cutting up corn, he felt a numbness of little finger of left hand. This numbness extended, in a few days, to all of the fingers and thumb of the left hand and was supplemented by strong flexion of the fingers—and at first during these contractions (of the fingers) the arm would drop helpless by his side. These symptoms were in turn supplanted by contractions of the muscles of the arm and shoulder gradually extending to neck. He continued to have these attacks at short intervals until in September, 1892, he had the first epileptic seizure, fell while at the table; second attack came on two weeks later; since that time the paroxysms have been very irregular, controlled somewhat by rest and free use of bromides. He had no attack from June 19, 1893, until October 1. He was about the house during this time taking medicine. The patient first came to our office in Keokuk, December 12, 1893; was able to tell a well-connected story—in fact the foregoing history was taken down as related by himself. He said he was not married; that he was losing his memory and had attempted self-destruction by shooting himself with a pistol—the evidence of which was two scars, one over sternum the other on left side of chest over seventh rib; the ball entered over breast bone, glanced along the costal cartilage following the rib and was extracted, having caused but slight injury.

Operated at St. Joseph Hospital December 14, 1893. Removed a button one inch in diameter at upper extremity of depressed fracture. The bone and dura were incorporated together in cicatricial tissue, the former spongy, easily nipped away by rongeur forceps. This was done until an area of at least two square inches of bone—including the button removed by trephine—was taken away. Hemorrhage was quite profuse and troublesome from a wounded vein—this was finally secured by application of catgut ligature. There seemed to be abnormal intra-cranial pressure, as the brain bulged quite prominently through the opening; there were adhesions between dura arachnoidia and pia which were carefully broken up—membranes appeared livid (congested) but pulsation normal—and no tumor or undue hardness could be felt by palpation; there was no motor response

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on the application of the battery. In this case we had first the sensory conditions disturbed, paresis or numbness along the peripheral distribution of the ulva nerve—that is, to the little finger of the left hand, extending first to ring finger and then to the other fingers. The dural flap was sutured with catgut, the button was fixed to the scalp flap by catgut suture and replaced *in situ*, a fasciculus of catgut was made to do duty as drainage. The scalp was closed with a few interrupted sutures and healed by first intention, except along the line of gut drainage there was some suppuration. This has continued until a few days since, under local anesthesia of cocaine we removed the button of bone which was lying loose under the scalp. This failure emphasizes the dangers of catgut.

Some peculiar and remarkable mental phenomena, which involves a serious medico-legal question followed the operation: When he came to himself from the anesthetic he failed to recognize the attendants—the Sisters at St. Joseph Hospital—he did not know where he was, could not account for his being in Keokuk. How he came and for what purpose seemed to be a profound mystery. When Dr. Walker, who assisted with the operation and who superintended the preparation of patient, visited the patient the next morning, he did not recognize him and said he had never seen him, so far as he knew. On thorough investigation it was discovered that the time intervening between September, 1892, the date of the second fully developed "*grand mal*" and December 14, 1893, the date of operation, was a perfect blank; being unable to recall anything that occurred during that period. Among the first questions asked of Dr. Walker was what his head was tied up for, what was done to him and for what cause? On being told that he came for the purpose of being operated on for the cure of epilepsy—and that the operation had been performed, which consisted of the removal of a portion of skull. Manifesting a good deal of emotion he immediately asked: "Does my wife know about this?" The doctor replied: "You told us that you did not have a wife—that you were not married." His reply was: "Well, but I am married and have four children, or did have in September, 1892." He did not know who the president of the United States was—supposed Harrison to be the man. He knew that the great Columbian Exposition was about to be formally opened, but did not know that it had come and gone. It would occupy too much of your time to relate the curious mental condition of this veritable Rip Van Winkle, who had just waked up from a sleep of fifteen months. In brief, his conduct towards his wife in the last two years had become so abusive she had sued and obtained a divorce some time in August or September of 1893, on which occasion he attempted self-destruction by shooting himself. The question now before the court is as to his sanity during the fifteen months of blank between September, 1892, and December, 1893. He asks the court to set aside the decree of divorce on account of irresponsibility. He has had one slight epileptic seizure—when he merely lost consciousness for a moment—that was on the occasion of a stormy and exciting interview at his father-in-law's house.

There is a condition called *epileptic automatism* which is not infrequently associated with the disorder and of which this case is a very notable example. On account of the long continuance of the unconscious state

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some observers hold that antomatism is only observed as a sequel to a fit, others that it may replace a fit. This whole question is *sub judici* and must be settled by carefully recorded cases. The line of conduct of the person under this automatism is uncertain; it may be in the way of doing odd or trivial things, or it may take the turn of dangerous or criminal acts. A satisfactory explanation of this condition is, perhaps, not possible. It has been said that in this state the patients are unconscious and in a sense this is probably true. It is consciousness perverted and having entirely new relations, a new set of cells called into action, having no connection or association with the brain cells that have received and retained the impress of the past. "Consciousness is a variable quantity, there being many degrees of it in the normal state from those processes that lie upon the border-land of sleep to those that play clear and vigorous in our most active operations." Morbid conditions degrade the ardor of normal mental processes and they do this by involving first the higher processes; that is, those that are more complex, more delicate, more unstable, more easily disintegrated by disease. The result of this degradation of the highest structures is that the lower orders of association become active and the mental processes that are shown are the exhibition of the brain working upon an inferior level, producing consciousness of an inferior order. The lower levels or orders of mental action are those of instinctive acts in which self-control is weakened or destroyed. These acts may be purposeless or silly, or they may be in the line of animal gratification or criminal, as pilfering or homicide. These instinctive tendencies are exhibited potentially in every mind and when disease weakens the higher faculties that hold these tendencies in check then they act without restraint.

Concerning epileptic automatism, it is important to remember that during its continuance there may be apparently sane and conscious acts of an intelligent and complex nature performed; there may be apparently intelligent conduct extending over, as in this case, fifteen months, involving conversation, business transactions and, in some reported cases, traveling long distances, crimes committed, self-destruction attempted to the infliction of a painful wound, and all this done when the patient is in an abnormal mental condition and of which he will, on recovery, have no recollection whatever. We wish to record these cases so that, taken with others so recorded, there may be light come to the future practitioner that may enable him to give permanent relief to these almost hopelessly affected sufferers from epilepsy.

DISCUSSION.

Dr. C. E. Ruth. *Mr. President:*—I think, in surgery, there is nothing which has more interest to me than the work under consideration in the last two papers. I am sorry I am not in shape to talk much on it. However, there are a few points that I desire to mention. First I wish to speak of one case that I operated upon about three years ago in which there was no localizing symptoms to guide me. The child had fallen fifteen and one-half feet, striking outside on a plank sidewalk. It was five years of age. Not to take up your time by attempting to go into detail in this case, but simply to state the child was able to walk about,

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answering questions intelligently, though slightly sluggishly. There was a very slight tumefaction to the left of the median line just behind the front parietal suture. I operated by trephining this point of tumefaction and found a clot between the dura and the bone which was removed and the child recovered in a few days—not to exceed two weeks. In this case there was no fracture. In another case there was no evidence of tumefaction; no motor paralysis and, in trephining, I found no evidence of fracture at the trephine point or elsewhere. I removed two or three square inches of bone. I found an abnormal amount of fluid. The patient had remained unconscious for three weeks. His recovery was also very prompt. Another case that I assisted in a postmortem, there was no fracture of the skull, yet there was evidence of an injury that we found, on removing the scalp, was a contusion that was not recognized before the scalp was raised, but the child's skull was abnormally thin for a child 13 years old—its age. There was an immense clot that was half as large as my fist, which is by no means small, which extended from the vertex of the skull to the base, covering almost one entire hemisphere. The middle meningeal artery had been ruptured rather low down causing death almost instantly. I mention these cases because there was no fracture and no localizing symptoms to some of them and in one of them we had such a tremendous clot that it produced almost instant death. I simply want to protest against leaving a case go to know where we have a cerebral injury and yet there are no localizing symptoms. The middle meningeal artery or some of its vessels is the part suffering almost always and when we have a statement that—equivalent to the fact that the base of the brain is excluded from the surgeons reach, I think we should not be willing to accept it; not as a so-called rule, at any rate. Ernest Laplace, of Philadelphia, more than two years ago, drained away a hemorrhage from the cavernous sinus. The trephine opening was made in the temporal region and the base of the skull filled in until the blood gushed out and the patient was relieved of the symptoms of compression. There are some other points I would like to take up, but cannot talk now, any further.

Dr. Snook. *Mr. President:*—I feel deeply interested in this subject and have been much gratified to hear these papers and were I competent would like to discuss the papers fully, but shall confine my remarks principally to Dr. Maxwell's second case; his "Rip Van Winkle". I am especially interested in that case, for two or three reasons. One is that, a few days before the case went to Dr. Maxwell, the man called in my office and, after a short examination, I suggested and advised an operation. The man made personal arrangements for me to operate, saying he would return in a few days and complete the operation, but Dr. Maxwell's greater reputation than mine reached him and he went to Dr. Maxwell. I have no criticism to make of the operation; I think the doctor made a proper operation, but it is a somewhat peculiar and unusual case in which there are entering more elements than those only of injury or traumatism. In the first place, there is an immense amount of the element of pure cussedness. That had been in existence for years before the epileptic trouble.

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Then we have the injury and, to my mind, from what I know of the case, there is an element of malingering about it, even at the present day. Now, shortly after the doctor had operated, I was called into the neighborhood where this man lived and, in a conversation with some of the neighbors that were well acquainted with him, reputable people, the operation being spoken of, the remark was made that the only successful issue that the operation could have would be to cause the man's death. That is the reputation of the man. Now comes up this question on his suit in court. Another reason I am interested is that probably I shall have to go into court as an expert on that case. A question that interests me is this forgetfulness, during these fifteen months, whether it was really so or not. The man is a man that is liberally endowed with what might be classed with the lower order of cunning. The laity that are acquainted with this man scout the idea of his forgetfulness during these fifteen months. One thing that strikes the medical man, investigating the subject on the ground, is certainty that there is nothing in his conduct or in his actions during that fifteen months that would be desirable for him to remember. [Laughter.] And, I say, gentlemen, it is a very interesting case to me and one that I was glad to hear the doctor report. Possibly in a year from now I may want to bring it up and report to this society. I am watching the case now. I will say that for the last two or three weeks, I have been attending a relative of this man, on whom I operated. The man has been back and forth visiting this relative. From what I can get there and from what I can get all around, the epileptic part of the trouble has been cured. The family, where I am attending, say from their observation that his mental condition is very much the same that it has been for several years and, from my own personal observation of the patient, which has been limited, I can recognize very little, if any change in his mental condition from what it was when I saw him previous to the stated operation.

Dr. Fairchild. *Mr. President:*—There is only one point that I wish to refer to and that is in relation to what Dr. Ruth stated in his remarks, to the effect that the trephining operation should be performed whether the physician found localizing symptoms or not. Now that is, according to the observations of surgeons, I think, going to rather an extreme degree. If it is true that unconsciousness following traumatism is due to rupture of the middle meningeal artery we shall go directly down with the expectation of finding hemorrhage there, but I think frequently very severe lesions of the brain occur without hemorrhage attended with unconsciousness and that trephining the scalp is useless, unless able to determine to some degree where the injury is.

Dr. T. J. Maxwell. *Mr. President:*—I will speak first of the case that interested Dr. Snook, and he knows more about the case than I do. I knew nothing about his previous history until after the operation. The day of the operation I went up into his neighborhood to see and to operate on a case, and there I learned something of the history of the man. They stated to me there that they were not very good stock; that he was somewhat devilish in his disposition; that he had been so ugly with his wife

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that he had gotten a divorce from her and that he had shot himself on that occasion. He told us about shooting himself; showed us the wound and, when I returned, Dr. Walker had told me about this condition of the mind before I saw him, so that I was on my guard as to his condition of feigning or playing off for the purpose. I was immediately put upon my guard so that I might investigate and I did. I went into the hospital and into the room off and observed very closely his eye. I had been several times in his company and was well acquainted with him before the operation. I thought I could catch him by the expression of the eye when I came in and I came in entirely unexpected and there was not the least expression, not the least idea of his ever having seen me. I spoke to him and he looked at me blank and stony as though it was not much of my business to be in there, and I said "How do you do" and he muttered something, and I said "Don't you know me?" He said "No, I never saw you before." Then, when I told him who I was, he become interested and brightened up. I tried to catch him in every way about recollecting things during the weeks he was here; brought up matters of history during the interim of fifteen months and tried to get him off his guard so I could catch him, but I did not succeed. He seemed to have his part thoroughly learned if he was playing off. He didn't know his overcoat. He said he never had an overcoat in his life; denied having a watch; never owned a watch, and still had one in his pocket. So I don't know; I don't think the fellow ever had enough sense or ever knew enough about cases of that kind to have deliberately made up his mind to carry that thing out. He seemed to be very much affected when I told him I had been up in his neighborhood and seemed interested to know what was going on and how he came to be in Keokuk; seemed to be quite emotional. So I am of the opinion that the man was not playing off.

Now, as to the theory, or the rule, that we should follow in trephining for injuries of the brain, I just have a few words to say, and that is, where you have a fracture with symptoms of compression, of course, always trephine. If you have fracture and compression without symptoms, always trephine. If you have a case of traumatism with symptoms of compression, always trephine. Further than that I don't know that we are justified. In point, I had a case here sometime ago: A child was trampled on by a horse and the calk of the shoe pressed the skull in; just dinged it in the extent of the calk of the shoe. There was not the least symptoms of any trouble there, but knowing that these cases very often eventuate in epilepsy and brain trouble I proceeded to trephine it.

Another case was like this: A boy was thrown from a wagon by a runaway and dragged some distance. He had a contusion on the head, was unconscious and had convulsions for two days. I cut down in the cranium and found no sinus fracture; there was no fracture; there was no protusion, but I got out two or three ounces of blood and the boy got well; so that will illustrate some of the rules that we have laid down.

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SURGICAL TUBERCULOSIS OF THE KIDNEY.

BY A. L. WRIGHT, M. D., CARROLL, IOWA.

That renal phthisis, tubercular pyelitis and tubercular pyslo-nephritis are of sufficient frequency to warrant consideration at our hands, is borne out by the fact that two cases have come under my observation during the past year, and were brought to a successful issue, one by a lumbar, the other by an abdominal nephrotomy; that the disease was primarily local and not due to extension through the genito-urinary track as is too frequently the case, or secondary to tubercular disease in other parts as in miliary tuberculosis of children, is sustained by the fact that no evidence of pre-existing tubercular difficulty could be discovered before the local disease was manifest, and that the patients have continued to enjoy most excellent health since the removal of the affected kidney.

So-called scrofulous disease of kidney is quite as likely to invade one organ as both, whereas disseminated miliary tuberculosis of the kidney is secondary to a tubercular foci elsewhere as in phthisis pulmonalis, tubercular meningitis, a tubercular joint or a scrofulous invasion of the glands, and is as a rule bilateral; this is the form of the disease we meet with most frequently in young children. But the unilateral surgical tubercular kidney is most frequently encountered in young adult life.

The discovery of the tubercular bacilli in the miliary form is frequently not made until after death. The little sufferer succumbs to a meningitis or the marasmus incident to a prolonged suppurating tubercular joint, the lesion does not give rise to characteristic symptoms and as it is almost wholly confined to young children, little can be done for this form of renal tubercular invasion in a surgical way, hence we will not occupy your time in the consideration of this form of the disease, but will at once take up the consideration of the chronic variety of tubercular disease of the kidney which is of great surgical interest.

"The seat of the infection is usually at the apices of the papillæ, in the calices or in the pelvis of the kidney, and from hence, partly by the blood stream and partly by the lymphatic channels, the material virus is carried within the substance of the kidney, the primary focus becomes occupied first by miliary tubercules and subsequently by a caseous mass. In the course of a few weeks or months, this mass forms an irregular softened area, which by progressive peripheral infiltration spreads inwards. At the same time by infection, new, and to the naked eye, apparently independent nodules develop in the tissue around, while in more remote parts of the kidney and in the mucous membrane of the pelvis an eruption of opaque white nodules may appear. In recent cases these diminish in size and number, the more distant they are from the primary focus, but when the disease is of long standing the individual nodules cannot be dis-

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tinguished. The construction process which has just been described is rapidly followed by a destructive one. The tubercular nodules having obtained a certain size undergo caseous necrosis, break down and when in the pelvis of the kidney they become replaced by a tubercular ulcerating surface, or if within the renal parenchyma they are transformed into irregular globular cavities, these as they enlarge, become elongated and assume a pyriform shape, and approaching the cavity of the renal pelvis rupture into it. As the destructive process extends from within outwards, greater and greater portions of the renal substance becomes involved until finally the whole of the medulla and a large portion of the cortex may be destroyed. This leads to the formation of a large cavity. But besides the encroachment on the renal tissue by tubercular disease, dilatation and sacculation of the organ may be caused by a blocking of the ureter, ultimately producing a tubercular pyo-nephrosis, which sometimes, when the other kidney is free from disease, destroys all vestige of urine-secreting tissue. Should only one organ be involved, the kidney may by a drying up of the contents of the pyo-nephrosis, become converted into a shrivelled, putty-like mass, but if the ureter be permeable, the urine washes away the collection of debris, and the products of suppuration, which present a characteristic appearance."

If the primary seat of infection is at some point within the kidney, this primary foci spreads into the renal substance and as it extends the tubercular tissue breaks down and is poured into the pelvis of the kidney, and from there washed into the bladder by the overflowing urine; providing the ureter is permeable, this produces more or less specific inflammatory changes along the ureter and in the bladder; the disease may extend then along the other ureter and involve the opposite kidney.

Morris shows by an examination of the records of Middlesex Hospital that of 44 cases of tubercular kidney met with in 2,610 necropsies 29 were miliary or secondary and 15 strumous or primary.

The length of time the disease may remain confined to the primary seat of invasion is, as in the lungs, we know that one lung may be the seat of tubercular deposit for a long time before invading the other, in the case of the kidneys the anatomical arrangement is so different that a considerable lapse of time must intervene before the primary foci of invasion can extend to the opposite side.

Regarding the etiology of primary tuberculosis of the kidney but little is known; the micro-organisms must first gain an entrance into the economy; this is generally accomplished through the lungs or food as in contaminated milk; but of the determining cause that localizes them in the kidney we are not certain; possibly chemical variations in the urine while yet in the pelvis of the organ cause structural change, or a trauma, as the passage of renal calculi or a crystal of uric acid, may exert sufficient influence to determine the localization of the *materies morbi*, or an infected emboli may gain access to the renal circulation and find lodgment in one of the smaller arterioles.

The early recognition of a kidney infected with tuberculosis is often attended with much difficulty; it is of vital importance to recognize at the earliest possible moment. When the specific infective material has been

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discovered it is very necessary to determine if the disease is confined to one or both kidneys. In the case of women this differentiation can be determined by catheterization of the ureter, after the manner suggested and practiced by Howard Kelly; if both kidneys are infected operative interference is out of the question.

One of the earliest manifestations of tubercular invasions and for which patients will seek relief is difficulty with the bladder, unless the ureter is occluded, thus preventing the escape of the debris from the kidney.

Vesical irritation, as shown by frequent and painful desire to relieve the bladder, is an almost constant manifestation of tubercular disease. In fact it may be said that tubercular pyuria seldom exists for a considerable period without some evidence of bladder irritation.

When a suppurative difficulty of the kidney is suspected the urine should be repeatedly examined for bacilli. Many slides should be prepared from the sediment that deposits in the urine as the bacilli will frequently escape detection even when present. A patient may have a tubercular kidney and there be no bacilli present in the urine as in my second case reported; in this instance a most careful and thorough examination of the urine was made and frequently repeated by a competent microscopist and he failed to obtain evidence of the presence of the germs; later their absence was accounted for by the occlusion of the ureter.

As a rule the earlier manifestations are those of a suppurative nephritis. There may be a little rise of temperature; as a rule however it is not high, intermittent in character and accompanied with slight rigors; later on the fever and rigors are more pronounced, and ultimately become hectic. There may be pain in the back and tenderness on deep pressure or bimanual examination may give rise to pain. The urine, at times, may contain the products of the disorganization going on in the kidney; it becomes smoky from the presence of disintegrated blood, and may contain mucous and epithelium cells in large numbers. When the disease becomes chronic the urine contains pus, in variable quantities. This depends upon the condition of the ureter of the diseased kidney. If permanently blocked the absence of pus and tubercular debris is noted; if temporary, the presence or absence of pus, etc., depends upon the potency of the ureter. Coincident with the closure of the ureter a tumor mass begins to develop on the affected side that is quite readily appreciated; if the closure is permanent the mass continues to increase in size and does not temporarily disappear and then refill. As soon as the destructive process has become established in the tubercular mass the urine furnishes important information. It contains large quantities of pus and granular debris mixed with broken down tubercular material containing bacilli.

As the disease progresses the patient's condition indicates prolonged suppuration. The septic manifestations are not unlike those of typhoid fever, and unless surgical relief is given death follows.

The greatest difficulty is in differential diagnosis between a calcareous pyelitis and a tubercular disease of the kidney; in the former the progress of the disease is much slower, and often the first evidence of renal difficulty is the presence of blood in the urine; the general nutrition of the

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body does not suffer to the same extent and as early as in tubercular disease.

The prognosis is influenced by the extent of the difficulty. If the disease is confined to one kidney and the lower urinary track has escaped infection the disease is quite amenable to surgical interference; if, however, both kidneys are involved or if there is extensive invasion of the bladder and uterus, the case is not one for active surgical interference.

As to the choice of operations, if the disease is limited to a small area a lumbar incision may be made and the kidney drained; this, however, is attended with some risk, as the danger still exists of the infection invading other parts, or the prolonged suppuration inducing amyloid infiltration of the other kidney. The caseous matter should be removed as far as possible during the operation, by scraping or by the application of the cautery. The leaving of more or less of the infected material in the incised kidney and our inability to determine positively that all has been removed ought to be a convincing argument in favor of the more radical operation of nephrotomy. If the patient's health will permit, the operation should be done as early as possible.

The operation is usually done through the lumbar region by a sinuous incision, although the kidney is frequently removed by an abdominal incision. The mortality following nephrotomy for tubercular disease is quite large, but not greater than in other suppurative conditions and with its large mortality it is urged that we resort to it, giving these otherwise doomed patients a chance for life. Our own personal experience during the past year substantiates this opinion, as two patients, one a man, the other a woman, have been spared through surgical interference and are now enjoying excellent health.

Mr. A., age 30, was brought to the hospital, suffering from some obscure renal difficulty; the clinical history was indefinite; there had been some pain in the earlier months of the attack in the lumbar region, not severe but annoying, loss of strength and progressive emaciation. There was nothing to indicate that the man now, or ever, had any pulmonary trouble or local focus of infection, in fact had always enjoyed good health until the commencement of the present illness about six months before. The general appearance of the man indicated some grave affection. There was slight digestive disturbance. A careful examination of the urine was made both chemical and microscopical, but nothing was found; the sediment was not examined for tubercular bacilli. Upon palpation, however, the right kidney was readily detected through the somewhat thin and flabby abdominal wall, twice its normal size; the organ was firmly fixed in its fossa. The urine was again examined but with the same result as in the first instance. An exploratory incision was advised and readily consented to. After the usual thorough aseptic precautions the kidney was reached through a Simon's incision in the lumbar region. Its large nodular size and soft doughy feel made us suspicious that we had a tubercular affection of the organ to deal with. The operating needle was passed into the pelvis of the kidney; upon withdrawal a little thick viscid tubercular looking pus was obtained. The organ was now carefully examined and found to be enlarged to about twice its normal size; believ-

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ing we had a tubercular kidney to deal with the diseased organ was removed. A microscopical examination was subsequently made and confirmed our suspicions. In removing the kidney it was carefully separated from the surrounding tissues and the pedicle tied *en masse* with chromacised cat-gut, cut and dropped into the wound. The ureter was carefully examined for evidence of invasion, but none was found. The wound was packed with iodoform gauze, dressed and the patient placed in bed; he made an uneventful recovery and left the hospital at the end of three weeks, much improved in health and strength and has remained so ever since. It is now about fourteen months since the operation and the remaining kidney continues to perform the extra duty required of it without any apparent difficulty.

Mrs. L—, age 26, German, married and mother of two children, has always enjoyed good health until since the birth of the last child, three years ago; since then she has suffered from an endometritis. About fourteen months before her present difficulty began I curetted the uterus, repaired a laceration of the cervix and perineum. Since then until in November last she enjoyed excellent health. During the latter part of November she was taken with a pain in the right side, midway between the anterior superior spine of the ilium and the umbilicus. This pain had been preceded by constipation; accompanying the pain there was fever, and almost immediately a lump about the size of my fist was discovered. This continued for three or four days, when she was brought to the hospital from a neighboring town. Upon examination I found she had a temperature of 101° F., pulse 90 per minute. At a point corresponding with McBurney's there was a distinct swelling four inches in length and three in width; this swelling was freely movable, but very sensitive to the touch. She was placed in bed and the intestinal tract thoroughly cleaned out with Rochelle salts. The mass began to disappear as the bowels began to move, and at the end of one week had entirely disappeared; with the subsidence of the swelling the temperature and pulse became normal. The woman was allowed to return to her home at the end of one week, with some doubt as to the exact nature of her swelling.

The last of December this patient returned, stating that at times she had been able to detect a lump in her side, that it had not been attended with fever or any disturbance, that it would disappear whenever she assumed the recumbent position. On examination a tumor was discovered about the size of my two fists, somewhat irregular in shape and occupying the space between the lower border of the ribs and crest of the ilium on the right side. The urine was examined repeatedly for tubercular bacilli, with negative result. The general condition of the patient was good. The mass was thought to be either a sarcoma or tubercular infection of the kidney with occlusion of the ureter. The kidney was believed to be floating also, owing to the great range of motion. Exploratory incision advised with a view to remove mass if possible. This was agreed to, and on January 10th the abdomen was opened under the strictest aseptic precautions, along the external margin of the rectus muscle. The mass was at once recognized as the kidney and the seat of tubercular infection. The investing layer of the peritoneum was opened and peeled off; the

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kidney was freely moveable, lifted from its bed, the ureter separated and tied, the blood vessels tied *en masse* with silk. A ligature was then thrown around the entire mass, Bilroth's forceps applied and cut between. There was not the least hemorrhage, the end of the ureter was carefully cauterized, forceps removed and dropped, the usual toilet of the peritoneum made, wound closed and patient placed in bed. The highest temperature reached was on the evening of the day of the operation when it was 100 4-5° F.; it did not rise above 100° F. This woman made an uneventful recovery and left the hospital at the end of four weeks. She has remained well since. The removed kidney presented the following microscopical appearance: There were several large irregular cavities, whose walls were formed of a rough breaking down tissue. The cavities communicated with one another and with the pelvis, and contained a dark tubercular pus mixed with urine. The ureters were impervious, hence our inability to gain information from an examination of the urine. The organ was dilated to the capacity of one pint, which amount it contained of this tubercular debris. There was none of the normal excreting structure of the kidney left. The walls were greatly thinned in places and must have ruptured soon. The debris and nodules contained tubercular bacilli.

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MASTOID DISEASE IN GENERAL SURGERY.

BY J. W. KIME, M. D., FORT DODGE, IOWA.

Though the modern tendency to specialism has placed mastoid disease in the list of special affections, the general practitioner and surgeon will still be consulted in perhaps a majority of these cases.

Earache will always be treated, if treated at all, by the family physician; and earache is, generally speaking, but a symptom of middle-ear disease.

In inflammation of the middle-ear, either acute or chronic, the mastoid cells are very liable to become involved. I think we may safely say that such is the rule, for it is difficult to conceive an inflammation limited to the tympanum, with the mastoid cells opening freely, as they do, immediately into the tympanic cavity. But, as under proper treatment, or without treatment at all, these inflammations of the mastoid cells and of the tympanum usually subside, and frequently without symptoms attracting attention to the mastoid region, the disease is not suspected. Occasionally, however, there arise symptoms that point to mastoid disease, and these the general practitioner should recognize and treat intelligently. It requires no special training to understand that in acute or chronic suppurative inflammation of the middle-ear, accompanied by more or less otalgia, while over, or in the vicinity of the mastoid process, there is pain, perhaps not very severe, tenderness on pressure, though it may be slight, with perhaps but little redness or swelling, the mastoid cells are involved to a degree requiring the closest attention. When accompanied by increased temperature, 100° or 101°, with headache and throbbing in the mastoid region, or when the swelling or tenderness is considerable, I believe the time has come when the mastoid cells should be freely opened. If we wait for cerebral symptoms our chances for success are small.

When it is known that suppuration of the ear is more frequently the cause of cerebral abscess than any other one disease the importance of timely interference is plainly evident.

The operation of trephining the mastoid is one which no skillful general surgeon need fear to undertake. After shaving and cleansing the parts, a verticle incision one inch in length, extending downward from a point just posterior to the upper margin of the external auditory meatus, is made as close as possible to the auricle. From the upper extremity of the incision another, horizontal in direction, extends backward a little less than one inch, the angle thus formed, including the periosteum, is stripped downward and backward laying bare the bone just posterior to the external auditory canal. No vessels requiring ligature are usually met with, pressure with forceps during operation, or torsion generally sufficing. The surface appearance of the bone is of little value. If diseased it only

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confirms our diagnosis. When not changed in appearance, as is often the case, we cannot infer that there is no pus beyond, the operation should be extended into the cells and free drainage established. After reaching the bone we may adopt one of three methods; the small trephine, the dental drill, or the chisel and mallet.

With the trephine there is danger of wounding the lateral sinus, as its movements are not so easily controlled as are those of the other instruments. With the dental drill we may easily pass into the sinus or through the vitreous table, as we cannot see or feel what we are doing. The small chisel I believe is the best instrument to use. The hole may be of any size we wish, giving us a constant view of our field of operation. When the spongy portion is reached the chisel may be used in the hand without the mallet, thus cautiously feeling our way, noting the increased or diminished resistance in front of the chisel. The opening should be made just posterior and as close as possible to the external auditory canal without penetrating its bony wall. A depth of five-eighths of an inch may be necessary but this limit should not be exceeded. Spongy bony tissue is usually found after one-eighth of an inch, but dense bone may extend to one-fourth or even to one-half an inch in depth, but if the chisel is kept parallel to the posterior wall of the meatus we have little to fear until we have reached a depth of one-half an inch.

The report of the following case in which double mastoid operation was done will bring out other points in the treatment of these cases without needless repetition.

On October 23, 1893, I was called twelve miles in the country to see W. C , aet. 22. Patient had for some time had nasal catarrh. Had had the galvano-cautery treatment about ten days previous to my visit; has also had a wash to snuff up the nose. About four days previous was taken with violent earache on both sides for which I was called. I found him suffering great pain in both ears. Temperature 101°, pulse 120°; both drum heads bulging and pulsating. Paracentesis was done on both sides followed by a bloody serous discharge. Opiates, quinine and hot boric solutions and washes locally every three hours day and night were continued for three weeks, during which time discharge became very purulent and profuse from both ears, pain and throbbing continued and mastoid symptoms began to appear on both sides, being worse on the right side. This was red and painful, sensitive to the touch, and considerably swollen. The point of greatest sensitiveness and swelling being more than two inches back of the ear, near the intersection of the posterior border of the sterno-mastoid muscle. The same was noticed later in relation to the other ear. As the patient continued to grow worse I concluded to open the mastoid on the right side, which, with the assistance of Dr. H. G. Ristine, I did on November 16th. The outer portion of the bone appeared normal. Dark bloody fluid began to show after a depth of one-eighth of an inch had been reached. With the chisel as a gouge the spongy tissue was removed to a depth of five-eighths of an inch when thick creamy pus poured up from the bottom of the wound. The wound was cleansed with bichloride solution and packed with iodoform gauze. The horizontal incision was closed, the vertical left open for drainage. The usual dress-

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ings were applied. The wound was cleansed and dressed daily. Healing was complete in twenty days.

I desire to call especial attention to two points in the history of this case. First, a very copious discharge of thick white pus continued to the time of operation. The discharge from the ear stopped immediately after the operation and did not reappear. The gauze packing showed pus for only a day or two. This shows the seat of inflammation to have been the mastoid cells and not the tympanum. The circuitous route of the pus from the cells through the tympanic cavity retarded by the perforated drum head was not favorable to resolution, while a direct opening, cleansing and free drainage promptly relieved a diseased process which might otherwise have proven disastrous. Second, before operation the watch could not be heard on contact, one week later it could be heard six feet.

On the left side the operation was deferred until December 21st, partially because the patient did not wish to risk a second operation, partially because his sister who was nursing him was attacked with diphtheria on December 5th. But on December 21st the left ear was in such a state that we could delay no longer. The discharge which had been what was formerly known as laudable pus, became thin and saneous; the swelling, pain and sensitiveness the same as had been on the other side; temperature 100½°, hearing 72°.

Dr. Ristine again assisting, we operated as before. The discharge from the ear ceased at once and the wound healed in about three weeks. The patient quickly regained his former health, and hearing in both ears is normal.

DISCUSSION.

Dr. Maxwell. *Mr. President:*—This subject of inflammation of the middle ear is one of great interest on account of its liability to terminate in abscess of the brain—this accomplished by the destruction of the thin scale-like wall—*the tegmen tympani*—that separates the middle ear from the cranial cavity. We find a great many cases of chronic inflammation of the middle ear eventually terminate in abcess of the brain and spinal cord or inflammation of their meninges by perforation of the thin wall of separation and escape of pus inward. I have only a few words to say with reference to operative procedure; that is the point of safety to make an opening with trephine or chisel. I have been recently engaged in special investigation of the subject, and my observations on quite a number of skulls demonstrate the fact that the sigmoid sinus—which is that portion of the lateral sinus contained in the sigmoid groove—corresponds to the entire length of the mastoid process, and in many of the specimens approaches very near the extreme surface. There is great danger in operating for mastoid abscess of opening into the sigmoid sinus, unless we observe certain precautions. There is a point of safety for entrance—the supra meatus triangle. This triangle is determined by drawing a vertical line from the posterior border of the external auditory meatus to the posterior root of the zygoma. The triangle is therefore contained within the space included in the vertical line just described, the posterior root of the zygoma and the upper border of the external meatus.

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The lateral sinus is outlined by drawing a line from the upper border of the meatus to the external occipital protuberance.

I will, in passing, merely call attention to the danger of using the chisel and mallet in these operations, and without specifying the particular points of danger in their use, close these remarks by saying that I prefer, on account of greater safety in operating, the trephine and drill.

Dr. J. M. Ball. *Mr. President:*—I regret that this paper has been so short. I regret that it is not more complete. I regret that Dr. Kime has not formulated, or attempted to formulate, a series of rules by which we might be guided in the treatment of suppurating otitis media. Perhaps it is an impossibility for any author to establish any series of rules of value in the treatment of these cases. I believe that Dr. Beck, of New York, has said that it is impossible for any man to lay down a series of rules governing the treatment of these cases, and yet, in his valuable treatise, after making that statement, he proceeds to formulate, so far as he can, a series of rules. There are a number of points in this paper of great value. One point that was mentioned was the depth to which the instrument used in making the perforation in the mastoid should penetrate and, if I understood Dr. Kime correctly, he said he would not go more deeply than five-eighths of an inch. Perhaps in a great majority of temporal bones the mastoid would be not of such development that it would be necessary for the surgeon to go to a much greater depth than five-eighths of an inch, but in some of the great museums of this country there are temporal bones displayed in which it is necessary, or would have been necessary for the operator to have gone an inch before he would get to the mastoid cells. We meet with great variety in the architectural development of the mastoid and, while it is true, as Dr. Kime has said, that it is necessary that one should be thoroughly posted with the general pathology in order to treat these cases, yet I claim it is even more necessary that one should be more thoroughly posted on the minute anatomy of the temporal bone. The operation upon the mastoid in children almost never requires the use of the chisel or the drill, for the reason that the external table, the dense table of mastoid, is so thin that by means strong enough the operator can simply go to work and, after spraying out, make Wild's incision and, by a little pressure, break through the plate and enter the mastoid cells and thus get all the drainage he requires. I have frequently seen children with a temperature of 105, delirious with mastoid trouble on whom the operation was made in the evening by Wilde's incision, using the pressure strong enough and the next morning the temperature would be practically normal and the little one in a week would be well. I think there is no question in aural surgery that is of more importance to the profession than this mastoid disease.

Now, in regard to what my friend from Missouri has said—for Keokuk is in Missouri or ought to be—about the use of the drill. We all know that the authorities are divided upon this subject. I have no doubt but what Dr. Maxwell has very good results from the use of the drill, especially the conical drill, which he has mentioned. Personally, I would never use the drill in any instance. I have never made use of it in chil-

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dren, except Swartz's set of chisels. I maintain that, with the use of the drill, the operator cannot see what he is doing, unless he frequently removes the chisel and flushes the cavity, but having Swartz's chisel he can see every step in the operation at every particular time. Another point, with regard to the concussion that may be transmitted to the structure, I do not believe, if the chisel is given proper inclination, and it should not be set at a right angle, but at a slant, I do not believe there is a particle of danger of doing any harm to the structures in the skull. I have been called to make mastoid operations where I did not find any pus, and I do not make this by way of apology, for I believe if we are to make a mastoid operation at all, it is better that we should make a few operations without finding pus than to go the other extreme and wait until cerebral infection has taken place. I have noticed this, that in those cases where I have operated upon and did not find pus, the pain and delirium was at once relieved, the temperature lowered and the patient recovered. I do not consider the operation upon the mastoid, if you do not find pus, is at all serious. The most serious thing that can happen in the opening of the mastoid is that which has happened to the best men living on opening the lateral sinus. I want to make a few remarks concerning what occurred in a case in New York in which there was no external suppuration; there was pain and a bulging of the tympanum. The patient declined for six or eight weeks to have an operation performed, and I had the pleasure, when she finally consented, of assisting. The patient came very near dying under the anesthetic; in fact, died in half an hour after it was finished. At the post-mortem, the next day, we found that the patient had an abscess in the right sphenoidal lobe, and had pus extending on both sides of the internal jugular vein. There was a very liberal distribution of pus in that case.

DR. MAXWELL:—Did you use the chisel and mallet, doctor?

DR. BALL:—Yes, sir.

DR. MAXWELL:—That accounts for her death. [Laughter.]

DR. NEEBE. *Mr. President:*—I concur, very generally, with the remarks made upon opening the mastoid sinus, or the mastoid process, and draining the pus when it gets there. When there is pus in the mastoid cells, this involves disease of the middle-ear, and there has nothing been said about letting the pus out of the middle-ear and keeping that middle-ear free from pus and allowing that pus to dam over into the mastoid. That I consider one of the most important points. When we have got a case of earache with bulged drum, then that must be opened, but there must be a free drainage, and I get that by the eustachian tube. I inject that eustachian tube by warm antiseptic solutions. I do not get this disease of the mastoid very often. A year ago last spring I had some six or eight cases of middle-ear trouble and the mastoid cells were not involved at all. In every one of those cases I used the eustachian catheter, placed it in place, taking the injection of boric acid and throwing it right through the catheter and sometimes injecting at the meatus—in several cases I did this. The point is to get this open and free drainage before it gets dammed over into the mastoid cells.

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DR. SHORE. *Mr. President:*—In speaking of mastoid diseases there has been one point that has been overlooked, I think, and that is that when we have disease of the mastoid it is not always necessary to open the mastoid cell. Very often we can, by making a Wilde incision, avoid the necessity of opening into the cells. We can, also, by enemata and poultices often produce the desired result, and in this way we can very often avoid the opening of the mastoid cells. With reference to the statement in regard to free drainage, I think we get the freest drainage it is possible to get by opening the mastoid cells. We have here a direct communication with the middle-ear, and there can be nothing freer than the drainage which occurs there. Another thing in regard to this patient who heard the watch some five feet off after the operation: that conveys to my mind nothing, unless I would know how far the healthy ear could hear the watch. It might be a half-hour watch.

DR. KIME.—I gave the distance of the watch as seventy-two inches.

DR. NEEBE:—I think that, with an ordinary tick, is a very unusual distance and I did not understand, unless the distance of the watch was stated, how it would practically convey any information at all.

I believe in the use of the drill and the use of the chisel. I think that in some cases we can use the chisel and in some the drill. Personally, I would not confine myself to either one, although I think the preference is decidedly in favor of the chisel. As far as shock to the brain is concerned, I do not think there is anything in that when the chisel is held in the manner indicated by Dr. Ball. Within the last two weeks I had a case come under my observation. I had my attention specially called to it when he spoke of the distance necessary to perforate before reaching the mastoid cells. This was a case of long standing, one in which the middle ear seemed to be the primary source of inflammation. The condition of the patient was rapidly getting worse, in fact, and it was considered the only safe method to open the mastoid cells. The patient was a large, angular, bony man of six feet—perhaps more than that—in height, and when we went to operate which was done, I will say, with the chisel and mallet it became necessary to perforate the bone one inch before the mastoid process was reached. Another one I call to mind in my practice within the last three weeks, where three-quarters of an inch was necessary to be perforated before the mastoid antrum was reached. The other features have already been discussed by the other members; at least the points in my cases.

DR. AMOS. *Mr. President:*—I think there was a protest raised by the reader of the paper against turning cases of mastoid disease over to the specialist, and I just witnessed, it seems to me, a spectacle of extreme audacity. While the reader of the paper protested against the specialist receiving these cases, I think that the discussion to-night has been carried on, with one or two exceptions, by specialists. I cannot look down this species of audacity in face of the fact that some of those seated here are specialists. I shall make a few remarks and increase the audacity of those who have already spoken on the subject. I would like to refer to one class of cases; the cases that come on insiduously, scarcely ever take on inflam-

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matory action, but finally result in rupturing the membrane, or, if the case is seen by a surgeon he often finds perforation of the membrane and which in the end terminates in mastoid disease. I think, if in this class of cases the bacteriological investigation of the pus in every case was systematically made, quite a proportion of them would be found to be tuberculous. The surgeons who employ this method systematically in the treatment of ear disease and uniformly make a bacteriological examination of the pus find this to be true, and it is this particular class of cases where the work of the surgeon should be carried out with the greatest of pains. I think those who are familiar with the work of men celebrated in this particular field are aware that there is a large latitude in the character of operations made. I will say but little on this. The most extreme operator that I ever saw was Prof. Lutzie, of Berlin University. The doctor is in the habit of constantly and persistently using the chisel, is in the habit of making an opening, which is not an opening at all, but rather a ditch. Uniformly in all these cases, especially where he finds the tuberculosis bacillus discharged, he makes an opening nearly, or quite, three-quarters of an inch in length and, in the use of the instrument he employs one about a centimetre in length and makes a large-sized opening; very often cuts in the mastoid bone three-quarters of an inch. I am quite aware there are another class of specialists equal to Prof. Lutzie, who would not make an operation at all where Dr. Lutzie finds occasion to make the operation. It is often hard for a man to decide where an operation should be performed, and we find a discrepancy here to-night as to what the operation should be. A very slight tenderness over the mastoid region, in the opinion of a great many eminent operators, is sufficient guarantee, especially when there is a chronic discharge, and especially when the microscope would indicate an operation.

Dr. Frederic S. Thomas. *Mr. President:*—I think one reason why the advice offered by Dr. Kime "that we should *not* turn these cases over to the specialist, but do them ourselves", is not more often followed is that a great many of our general practitioners, when they have a case of inflammation of the middle-ear, allow the case to go on until it reaches such a state that the specialist is necessarily called in to help them out. I think that if the general practitioner would more often use the lance in opening the ear drum, and allowing the pus to escape, there would be less need for operation on the mastoid. During this week I had a case of otitis media where we lanced the ear drum thereby shortening the suffering and making it possible for me to attend this meeting of our State Society. If I had allowed the pus to accumulate I could not have come. I would suggest, before taking the advice of the gentleman who read the paper, "that we should do these things ourselves, instead of turning them over to the specialists", that we should first qualify ourselves, so we would be able to use the lance on the ear-drum and relieve the necessity often, of further operation. Of course nature is very kind, and but a small portion of the cases of otitis media ever extend beyond the tympanum. Our patients go on suffering until nature or the surgeon relieves them. I think there is another thing that we will find, and that is, that the brain suffers as much

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(and more frequently) from extension along the labyrinth than it does from extension to the mastoid cells.

DR. PIPINO. *Mr. President:*—I have listened to the paper read by the gentleman, and I must say that I like his paper. Although it was short, I like every part of it, except the last clause; the clause that Dr. Amos just discussed a few minutes ago in regard to turning these cases over to the specialist. I don't know what Dr. Kime has against the specialist, but I do know that he never lets an occasion go by without throwing a broadsider against them. Three or four years ago, in a discussion on the diseases of the eye, he made remarks disparaging to the specialist. Now, there are various kinds of specialists; specialists who confine themselves to certain diseases, and, then, there are other specialists who are specialists for everything under the sun. We frequently find them, and I am inclined to think that Dr. Kime is one of these. Now, I have had some experience in the treatment of mastoid disease. I saw three cases of it to-day. I just left a case as I stepped into the room, and my friend to the right of me was at the house with me. It was his nephew that I saw. These cases, a great many times, are very puzzling. It is a serious question sometimes when to operate and when not to operate. The case I just left, to which I have just referred, that I saw about half an hour ago, is one that has annoyed me considerably for the last two weeks, and not only me, as to whether an operation should be performed, but it has annoyed the gentleman beside me here. Dr. Priestly could not decide the question, and he could not decide to-day whether to perform an operation or not, yet this is a case where there is profuse suppuration of the middle ear and no tenderness whatever for operation. His mind is clear, the pupils and temperature are normal, tongue clear, and has complete control of all of his extremeties and yet he is not getting well as rapidly as he ought. Notwithstanding the catheter is introduced every day and the middle-ear cleaned and washed out, besides being cleaned during the intervals between my visits, yet I say this patient is not progressing well. But one peculiar feature is, his temperature is normal in the forenoon and rises very rapidly in the afternoon and yet we cannot see whether there is any pus accumulation there or not. So it is not always easy to decide; the specialist cannot always decide. We are no smarter than the general practitioner, nor are we able to draw the line when we shall operate and I am free to say that we do make mistakes, as well as the general practitioner, but, unfortunately for us, we cannot hide them as well. In regard to the operation, I am somewhat like my friend, Dr. Ball. He said that no particular rule could be formulated for the operation. I believe that every case is a law unto itself and every man must be governed by the case he is about to operate upon. In other words, he must use common sense in these operations. I invariably use the drill; I have no experience with the chisel, for the simple reason that it never struck me favorably. I have never used the trephine, because I believe we can get along without it, but my method is always to use the drill until I get through the outer table and then use dental scrapers—the scrapers the dentists use in finishing up rubber plates. I invariably use a scraper, and with that you can

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very readily tell the amount of diseased tissue you come in contact with. It matters not if the cavity is very shallow or very deep, I remove the whole of the diseased tissue, even if I have to remove the whole bone, and I say, for that reason, no rule can be laid down in these cases. I remember one case wherein Dr. Patchin administered chloroform. There was no doubt about the trouble. There was pus in the middle-ear and pus in the mastoid cells and, I was almost going to say, there was pus in the man's whole head. As I said, the doctor administered the chloroform and I was about half through the operation when the patient suddenly ceased breathing. The question was whether we should continue. I concluded if the patient succumbed under the chloroform we would be blamed as much as if we went through with the whole operation, so I suggested to the doctor, if he would keep up the pumping I would keep on with the operation. The result was, I finished the operation and the doctor succeeded in establishing respiration. Another case: There was the case of a little boy, whom I saw on the other side of the river, who had otitis media purulenta. As he had had it two or three times previously in his life, his mother thought nothing of it, until the little fellow had suffered about a week, when Dr. Priestly was called to treat him and immediately recognized serious trouble. The boy was semi-conscious, and had been for two or three days. I saw the little fellow at noon and that night; with the assistance of Dr. Priestly, I opened the cells. It was three days after the cells were opened before the boy regained consciousness and knew that he had been operated on. There was free drainage and a complete cessation of the discharge through the meatus. One of the peculiar features about the case, however, was this: I saw the boy about noon one day, his temperature was normal and so was his pulse. I expressed my opinion that the little fellow would soon be out, and promised him to be out the following Sunday to see Kelly's army, but I had not left the house two hours, when a messenger hastily came to me and asked me to return immediately, that they thought the little fellow would die. I thought it somewhat strange; could not understand it, as I had left him so short a time in so promising a condition and, when I returned, I found a temperature of 104° and the little fellow partially unconscious. Thinking it might be due to pus somewhere, I had the drainage removed and the cells washed out with pyrozone, the solution returning clear, showing that there was no pus. The temperature never rose after that. That is the second time that I have noticed an extensive rise of temperature in these cases. What it is due to I do not know. It evidently was not due to pus.

Dr. D. W. Finlayson. *Mr. President:*—Since listening to this discussion on middle-ear disease, I am surprised that any case of otitis media is allowed to progress to the extent of suppuration. There are three dangers that confront us in opening into the mastoid cells; the smallest of which is cutting the occipital artery; the greatest of which is either perforation of the lateral sinus, with more or less venous hemorrhage, or unfortunately opening into the tympanum, or middle-ear. I suppose it may be unknown to some of the members of this Society that there are many instances where the anterior wall of the petrous portion of the

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temporal bone is thinner than paper and capable of small resistance and, while it has been said here that meningitis and cerebritis may occur from mastoid disease, I think strange that it does not result more frequently, when we consider how fragile a wall protects the brain and its membranes from suppurative invasion. The anterior surface of the petrous portion of the temporal bone is so very thin that, in dissections made last winter, I could hold it up and, by transmitted light, see to read through some of its weaker sections. Therefore, with a thin wall like that upon which lies the meninges supporting the brain, in case of middle-ear otitis the condition may easily lead to meningitis or cerebritis. This menace is always present and should lend discretion to our treatment and prognosis, for we never know when serious, perhaps fatal, symptoms of brain inflammation may occur, and the younger the patient the greater is the danger because of immature bone development. A depth of five-eighths of an inch has been given as sufficient to enter the mastoid cells. It has well been said that that depends on the length of the mastoid process. I have in my office a temporal bone with a mastoid process so long that the proprietor, with its hook like form, might have hung himself on a clothes line. It varies considerably in length in different processes and the only rule we can adopt is to cut into the middle—cut in a line in the direction of the mastoid process keeping away from the lateral sinus, and everyone should understand its location. Also avoid the occipital artery and be careful not to drill into the middle ear. Children under fourteen years of age have no mastoid cells. These, like the other split bone air-cells, are not developed until after puberty. In the case of a child two years old, which I observed a few years since, resulting from scarlatinal inflammation coming up through the eustachian tube, the entire temporal bone was dead and a section of the tempero-sphenoidal lobe of the brain was a necrotic mass. A section of the bone showed non-development of mastoid cells and process. It was simply inflammation of the osseous portion of the eustachian tube that first caused osteitis and, subsequently, death of the bone in this locality and which finally resulted in the death of the patient.

Dr. Kime. *Mr. President:*—I will say but a word, and that in reply to Dr. Pipino. He thinks I have a special spite at the specialists and the little personal fling he makes against me as being a general specialist, he can make against any general practitioner. It is necessary for the general practitioner to know something about a great number of things. We do not claim to go into things like I know Dr. Pipino does, and what I said does not refer to him at all, but we know our colleges are turning out a class of specialists who know nothing about medicine except what little knowledge they acquire at these different schools and they come out and hang out cards as specialists. It is against that class that I am fighting and not against the class to which Dr. Pipino belongs, because I know him to be an able physician.

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THE MURPHY BUTTON WITH DEMONSTRATIONS.

BY C. E. RUTH, M. D., KEOKUK, IOWA.

Those who were present at the Burlington meeting one year ago or have given attention to the work of the Society will probably remember that at that meeting I called the attention of the Society to the Murphy button. At that time evidence in favor of the button was of limited amount and it was by many of our best men condemned on theoretical grounds. Those who had done any considerable amount of experimental work with it were at once compelled to abandon many of their objections. It was plain to all that it was an ingenious device which gave the strongest junction in the least possible time. These facts and the leaving of no foreign body permanently in the peritoneal cavity, walls or lumen of the gut have taken deep and favorable root in the minds of the profession. It was urged that the button was likely to cause secondary obstruction by failing to pass the ileo-cæcal valve. The work that I had done on dogs indicated that these objections were not valid. As the dogs' intestines are stronger than those of man it was urged that experience in the paassge of buttons in the dog was not a fair test of their use in the human subject. After having done chole-cystenterostomy, gastro-duodenostomy, lateral, and end-to-end approximations on animals I did Bacon's operation for rectal stricture on a small dog. I found the rectum literally packed with bones and hardened fecal matter. These I slipped toward the stomach and made the anastomosis immediately behind the dense impaction. In five days the bones, button and all came away and the dog was well. I am thoroughly satisfied that the strain on that junction was greater than it would be in any use to which the button could be put in the human subject. Emboldened by experimental successes I was prepared for the following case:

Case I. October 18, 1893, operated on A. Mathews, æt five years, for intestinal obstruction of three months duration. The operation was made before the Keokuk Medical College class. He had been on liquid food and cathartics daily for the entire period of the obstruction. He was anæmic and emaciated. Three large tumors in the cæcum almost closed the gut. The entire cæcum, two inches of the colon, three-fourths inches of the ileum and appendix together with all the enlarged glands were excised. Approximation was made end to end with the smallest sized Murphy button. The relative diameters of the colon and ileum were about as one to three or four. The colon was greatly dilated. After the first twenty-four hours the child's recovery was uneventful. Microscopical examination of the specimens by Drs. Behring of Iowa City and Minges of Dubuque, established the fact of the growth being sarcomatous. The boy gained in strength and weight till the normal was reached. He

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remained perfectly well for four months. Gradually he again became anæmic, the mesenteric glands became involved and he died of exhaustion April 27, 1894, having lived one hundred and ninety-one days without any return of the symptoms of obstruction, following the operation. The button was passed the tenth day. Had I used any other device I must certainly have immediately lost my patient from prolongation of the operation. With no other device would I have dared to commence feeding in less than twelve hours.

Case II. April 2, 1894, Drs. Newton, Newlon, H. W. Morgridge and Chapman of Ft. Madison, Iowa, made a resection of three inches of the small intestine, near the middle of the ileum, for intestinal obstruction due to a neoplasm in the mesentery. The patient was a boy aged thirteen years and small of his age. His condition was one of extreme emaciation. End to end junction was made with a large sized Murphy button which was passed with ease on the fourteenth day without inconvenience of any kind. In fact it was passed without the patient's knowledge. This case should be sufficient of itself to forever settle the question of secondary obstruction from failure of the button to pass the ileo-cæcal valve. The child made a perfect recovery and is well at this writing. In my case though I used the smallest sized button and fed my patient from the start, gas was passed the first twenty four hours and fæces the third day, and daily thereafter, thus meeting the objection that the opening through the button was inadequate in size. In approximations of the colon there is no need that anything but gas be passed till the button is ready to separate and as the contents of the small intestine are always fluid, with proper feeding, they will always empty themselves with ease through even a small button. See *Tri-State Medical Journal*, December 1893.

Fifty-five cases have now been published in which the button was used to make various forms of anastomoses in the human subject without a single case of secondary obstruction from failure of the button to pass the ileo-cæcal valve or any other normal point in the gut. No case has occurred of obstruction due to the small size of the opening through the button; not a single fecal fistula reported. What has been said of these fifty-five cases in the human subject may also be said of at least three hundred cases of approximations in animals. We may claim the following facts as proven without fear of successful contradiction:

1st. The Murphy button shortens the time required to do an intestinal approximation fifteen to forty minutes.

2nd. Properly applied leakage is impossible and no hydraulic or gaseous pressure is needed to determine the fact.

3rd. It is the strongest junction known.

4th. It gives the minimum of cicatrix and contraction.

5th. It is the only plan that can be relied upon to make the end to end junction.

6th. After completing its work it leaves no foreign body of any kind behind.

7th. The idea of the button causing secondary obstruction by failing to pass the ileo-cæcal valve is a myth, if any judgment be used with reference to the relative size of the button used and the gut operated upon.

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8th. The greatly lessened mortality makes this hitherto almost impracticable field of work compare favorably with other intra-peritoneal operations.

9th. It should relegate fecal-fistula following operations for strangulated hernia and intestinal reservations to the past.

10th. The purse string is the only stitch required to unite guts of different caliber when the button is used.

DEMONSTRATION.

The animal being in readiness we will now proceed to demonstrate Bacon's method of operating for the cure of suitable cases of rectal stricture by lateral anastomosis between healthy gut above and below the strictured point. The entire alimentary canal, but especially the rectum, should have been as thoroughly emptied as possible some hours before operation. My assistant now carries one segment of the button into the rectum on a sound which snugly fits the inside of button's stem. The tip of the sound carries the button segment to where we will assume the stricture is located and the projecting stem of the button and tip of the sound are held in position pressing lightly against the anterior wall of the rectum. The abdomen is next opened as you see in the median line and the tip of the sound with its piece of button enables us to immediately locate the rectum and follow it up to where the other segment is to be placed. A point farthest from the mesentery is selected on a portion of the upper part of the rectum or sigmoid which has a mesentery long enough to permit of its being brought down to where the lower segment is held. A needle with a silk thread large enough to handle easily is now carried through all the coats of the gut and two or three stitches taken in the long axis of the gut and without cutting the thread, like stitches are placed in the same manner parallel with those first introduced and one-fourth of an inch from them, but introduced in the opposite direction. Having previously stripped the contents of the gut out of the way and placed the clamp on the stomach side we are ready to open the gut which we do between the lines along which the thread is introduced. The cut is best started with the knife but after the gut is opened may be enlarged with the scissors. Especial care must be taken to avoid cuting the thread or extra time and annoyance follows in its reintroduction. See *The Omaha Clinic* for September, 1893.

The opening in the gut should not be more than three-fourths as long as the button is wide. The segment of button corresponding to the one in the rectum is now held by a slender forceps and by a rotary motion its bowl is introduced into the opening in the gut and an assistant holds it with its stem protruding while the purse string is drawn around the stem, tied, and cut short. All the coats of the gut are thus brought over the rim of the bowl at all points. We now cut down upon the other stem and make an opening only large enough to admit of its passage, thus avoiding the necessity for a purse string for the lower segment. The button is now ready for approximation of its segments, and the operation is complete so far as the anastomosis is concerned. Care must be taken to see that serosa approximates serosa at all points with no mucous membrance or

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thread tips between the bowl margins. Firm pressure must be used on the segments in their coaptation to insure against fixation of the button or defective union. Should the stricture be high enough a circular enteroraphy should be done. Bacon uses and recommends a small sized button and after it has separated he introduces one blade of a clamp forceps through the button hole and the other through the stricture and clamps out the septum but it seems to me that this is a useless addition. The large button is as readily placed as a small one and the protracted convalescense and added risk are not to be disregarded. The large button meets all the indications at once.

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EXTRA-GENITAL CHANCRE.

BY JAMES TAGGARD PRIESTLY, M.D., DES MOINES, IOWA.

Extra-genital chancres are always of interest as the failure to diagnose them early and to treat them promptly is the cause of the rebellious form of syphilis that follows them, and this is the only rational explanation of why syphilitic poison introduced into the general system through some other location than the genitals should be more difficult to bring under subjection. The most common form of extra-genital chancre, in my experience, is chancre of the lip. I have kept record of five cases of this kind; in every case the upper lip has been the one affected. Why this preference for the upper lip I cannot explain on any other hypothesis than mere accident.

Case I. Was a young, innocent girl of 15 years who contracted a chancre in center of upper lip from kissing her brother who had numerous mucous patches on his lips. It was quite promptly recognized and yielded very kindly to treatment, being no more trouble to keep under subjection than a case of syphilis contracted through the normal route.

Case II. Was a good-looking prostitute who had contracted a chancre in the center of upper lip from the penis of a patron while using her mouth to gratify his lust. The chancre had existed for several weeks and the glandular enlargement on both sides of the neck was considerable. The treatment finally caused the eradication of the disease after a hard-fought battle involving some years of time.

Case III. Was a lady of easy virtue, who strenuously denied using her mouth for the gratification of any of her male friends, except by kissing and tongue sucking; so, if truthful, her trouble came from a mucus patch. The location of the chancre was midway between the center of upper lip and the right angle. The case was diagnosed early and treated promptly; it yielded with as much facility as Case I.

Case IV. Was one of unusual interest, both from the inexcusable mode of introduction of the poison and the number of persons involved. A young man had trouble with a wisdom tooth which his physician extracted for him; as the forceps came out of the mouth with the tooth enclosed, it struck the upper lip near the center on right side, pinching it so severely between the forceps and teeth as to break the mucous membrane, from which a drop of blood oozed. In some three weeks a sore formed at the seat of injury to the lip, which did not yield to the treatment instituted by his physician; the glands on both sides of the neck became enormously enlarged, producing what his physician termed the mumps. The disease not yielding as it should caused him to seek further aid. When he came under my observation he had the initial lesion on the lip, the glandular enlargement which was enormous, and macules over the

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whole body. His case was very hard to get under subjection, but has finally yielded and is progressing very favorably at the present time.

Case V. Was a young man of 24—room-mate of Case IV. The initial lesion was on upper left lip at angle with lower lip. It was promptly recognized and treated accordingly; it yielded rapidly—the secondary symptoms were well marked but mild. His case is well under subjection.

Next to chancre of lips in frequency of extra-genital chancre, comes chancre of the nipple in the female. I have seen four of these cases, all of which were contracted by the nipple being sucked in the mouth of persons having mucous patches. Two were caused by syphilitic children, the mothers having escaped until nursing their offsprings and then becoming infected for the first time. Both of these cases were beautiful examples of how a woman may give birth to a syphilitic child and yet not be contaminated herself. These cases were diagnosed very early and yielded promptly to treatment. Two cases were developed by having the nipple titilated by the tongue of lovers who had mucous patches of the mouth; in these two cases neither came under observation until the glandular enlargement of the corresponding axilla was so marked as to be painful, and one had also the macular eruption. These two cases were quite rebellious to treatment but finally were cured, but the struggle was a long, hard one.

Chancre of the fingers is the next in frequency. I have seen two cases of this kind. Case No. 1 was a man aged 30 that had been bitten in a fight; his opponent bit his little finger, crushing the bone. No attention was paid to it, except to wrap it up in some kind of grease. In a few days he went to a surgeon who slit up the finger and removed the crushed bone; the wound healed rapidly and was well in some ten days. Two weeks later the stump began to swell, and was much enlarged and painful; the lymphatics of the arm soon became involved; some two weeks later macular syphilides made their appearance over the body. The case was a most stubborn one, requiring very active treatment and some four years of time before it could be pronounced cured. The patient has been lost sight of and his career after that time is unknown to the writer. Case No. 2 was the surgeon who amputated the finger of Case No. 1 of this class, he receiving a scratch from a small spicula of bone in his thumb from which followed an attack of syphilis that took six years of constant treatment to finally subdue, the surgeon at the lapse of eight years enjoying perfect health, apparently. Neither of these two cases were properly diagnosed until macular syphilides made their appearance.

I have seen a chancre of the knee in a child of five years, who was in the habit of sleeping with a syphilitic mother, in the secondary stage, and no doubt contracted it by allowing her knee to come in contact with the person of her mother who was afflicted with mucous patches of vulva and anus. The case was promptly recognized and treated; it yielded promptly and was soon discharged cured and has been well since.

The history of these few cases shows that those recognized early were cured readily, while those recognized late were stubborn to yield. This fact should lead us to follow the suggestion of Hutchinson, of London, to diagnose syphilis from the initial lesion and commence treatment then and not wait for the appearance of the secondary manifestations, as was form-

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erly taught. It is true we may make mistakes, but the mistakes are on the right side. The subsequent history generally proves the correctness of our diagnosis, for very few cases will escape all the secondary manifestations, no matter how vigorous the treatments are, but these will be so modified as to yield promptly to treatment.

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ULCERATION OF THE RECTUM CAUSED BY HYPERTROPHY OF THE PROSTATE GLAND.

BY D. W. FINLAYSON, M.D., DES MOINES, IOWA.

Ulceration of the rectum may occur and does frequently occur from various reasons and from numerous causes, but the case considered under the title-heading had one and only one causation and that was obstruction below the seat of ulceration. It is authenticated that the most frequent lesion in urethral discharge is an ulcerated condition posterior to one or more organic strictures. The flow from the bladder impinges upon the obstruction and produces at first a slight redness and epithelial hyperplasia with tenderness, to be followed unless arrested, by active ulceration and discharge. Division, gradual dilation or divulsion relieves the condition and affords permanent exemption to the damaged urethra if maintained; but if the canal is either again injured or the former condition of organic stenosis returns the previous causes and effects again exist. The anology between the condition just described and the condition of the case to be now related is perfect, the difference is only in location. The prostate gland properly belongs to the genito-urinary system and happy is its possessor if none of the surrounding structures are invaded by hypertrophic changes in its muscular and glandular tissues. So long as the rectum is in no measure obstructed it is safe to assume that the gland is not enlarged and even the so-called third lobe can not be increased in size without some degree of interference with the calibre of the rectum, accompanied by more or less constipation from mechanical interference and inflammatory heat that dries the fecal mass resting above the gland. In the examination of a considerable numerous class of these cases where complaint of urinary obstruction was the only incentive for asking advice, in every instance the lumen of the third portion of the rectum was more or less narrowed by pressure of the prostate gland protuding from above downwards and from before backwards. Digital examination of young persons and of those known to possess no enlargement reveals the fact that the prostate, lying as it does in the antero-superior wall of the lower two inches of the rectum, does not interfere with its sacculation nor the independent action of the sphincters. One of the secondary effects therefore of prostatic disturbance is serious interference with the duties of the rectum; first constipation, then mild inflammation and finally alternating, obstinate constipation, occasionally diarrhœa and ulceration. Injections, logically are employed and give great relief, not permanent, however, and simply herald the beginning of a long and almost hopeless task. In time the mild tolerance at first experienced becomes intolerant and an ulcerative, irritable and painful condition of all or nearly all of the rectum obtains. This excitable condition develops tenesmus and increases the distress in the prostate, defaca-

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tion and micturition become co-ordinate and are no longer independent of each other in action. Each act excites the contraction of both organs and unless fortunately arrested the condition grows worse until the entire perineal colony of genital, urinary and digestive organs become intolerant to their normal functions and the patient dies from exhaustion or uremic poisoning and digestive changes, one or all.

The patient referred to in this paper, whose history and death are of recent occurrence, was a man of strong physique, temperate habits, regular in all his life duties and fully intelligent of his own condition. In 1893 he first applied for medical relief because of frequent urination; shortly afterwards he also complained of unusual constipation that would not yield to ordinary remedies. His condition was easily recognized, and a diagnosis of prostatic hypertrophy was given—an examination of the rectum disclosed the tumefaction protruding into the rectal cavity associated with extreme tenderness on making point pressure. Time and medication brought no relief and his suffering with all its allied nervousness gradually increased. Many neighborly advisors brought many medical attendants and some indiscreet and quite unwarrantable promises of permanent relief were made with and without a surgical operation, which relief never came to him. In the meantime the rectum became more and more intolerant and a carefully conducted examination with the bivalve speculum and reflected sunlight disclosed a field immediately above the indurated prostate of large area and covered with deep ulcerations with congestion of the hemorrhoidal vessels. At this period all discharges from the pelvic organs were becoming involuntary; evacuation of the bowels would excite the same action in the bladder and vice-versa. Priapism was at times frequent, annoying and painful and the prostatic reflexes were so powerful, constant and distressing that malignancy was suspected partly because of the symptoms and also because the mother of this patient had died from cancer in the analogue of this organ, the uterus. The reflexes were so severe and exasperating that opiates were almost constantly necessary to secure sleep and rest from pain. Here was a condition of obstruction from mechanical causes of the two important excretory outlets of the body either of which could produce death from exhaustion, if not intercepted or mitigated. The bladder, ureters and kidneys of one system, the rectum and digestive organs of another system, and the mucous membrane of all, were in a condition of inflammation, hypertrophy and ulceration. The rectal mucous membrane became so excitable that the presence of an instrument for diagnostic purposes or of enemata provoked powerful reflexes and functional spasm that excluded fluids and retained gases until increased flatulence induced difficult respiration by lifting the diaphragm. The functional stricture was as potential a barrier as the prostate and a grave complication for many reasons, one of which was incipient peritonitis. During the last six months of life not one painless and regular movement of the bowels occurred, not an hour elapsed without pain in the rectum either from ulceration or more or less energetic spasmodic reflexes in the prostate. In an old patient, and this affection belongs to a class of men somewhat advanced in years, nothing but operative interference can give permanent relief and the sooner, the safer and better the result, not

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alone for protection to the kidneys and bladder but about equally valuable to the alimentary tract. When left to routine treatment rectal tenesmus is quite certain to develop and soon hypertrophic changes occur in all the pelvic organs but chiefly in the rectum and bladder.

In conclusion, this paper reports the condition found in many instances and the special and recent study of a typical case—there likely is nothing new to the profession in what is here related; few papers merit that high honor. The desire of the writer is to direct attention to a condition that is well known but often overlooked and shadowed by the more imperious attack made upon the bladder and associate genito-urinary organs. It is irremediable until the cause is removed and we all know what confronts us in operative procedure, serious in all instances, but brilliant, a credit to science and a blessing to the sufferer when followed by success.

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A CASE OF ARRESTED DEVELOPMENT COMPLICATED BY INHERITED SYPHILIS.

BY W. HUTCHINSON, M. D., DES MOINES, IOWA.

Mr. President:—The patient is a girl of twenty-seven whose height is only four feet five inches. Her weight at birth was one and one-half pounds. Up to the age of seventeen years she had only reached a height of three feet and one inch; began to grow in her seventeenth year and in about eighteen months reached her present height. Her weight is now seventy-three pounds. Family history negative, except as to syphilis, and that her father also grew considerably in height after his twentieth year. Mother normal size. She presents well marked signs of inherited specific taints, opalescent cornea—with history of blindness of some months—in both eyes; Hutchinson's teeth and a scar over the thyroid cartilage, marking the site of an abscess due to perichondritis. This occurred when she was about eighteen years of age and the cords are so badly drawn down as a result that her voice is reduced to a hoarse whisper. She is the first child born alive, after several miscarriages and two of her sisters died in infancy. She gives history, also, of having had sores all over her body while a child. The rhagades about the mouth are distinctly visible. Her generative system is about that of a child of eleven and she has never menstruated.

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SECTION OF STATE MEDICINE AND HYGIENE.

THE PHYSIOLOGY OF EDUCATION.

BY WOODS HUTCHINSON, A.M., M.D., DES MOINES, IOWA.

One of the greatest triumphs of science in general and of our profession in particular has been the placing of all things upon a physical basis. A determined effort has been made to reduce all problems, scientific, social and even political, to the terms of a chemical equation. We are far short of success, as yet, but the gain, from merely the application of the method, has been enormous. It has been used often in the crudest manner upon absurdly inadequate data and has led to mistakes and failures innumerable, but the grand principle itself, of a knowable, physical cause for every possible phenomenon, whether material, mental or spiritual, has been a veritable guiding star through the mists of ignorance, the fogs of prejudice and the swamps of bigotry.

One after another the great fields of human thought and endeavor have been pervaded and conquered by this idea, the sciences first of all, beginning with astronomy and geology and ending with zoölogy under the magic touch of Charles Darwin; then industrial enterprises and problems; next, but much less completely, medicine, history, statecraft, leaving education and religion as the last and well-nigh only harbors of the mysterious, the arbitrary and the illogical. And very safe harbors they are for some extremely imposing old hulks which could neither navigate nor fight in open water. Indeed, of late years, they've given up all idea of such a thing but content themselves with showing their teeth and running out their old-fashioned carronades whenever an impertinent little gunboat of a new idea shows itself off the harbor-bar. Most of them have rendered excellent service in their time, but they now simply encumber the anchorage and should be used only as storehouses or light-ships—striking illustrations of what *not* to do—or broken up altogether. Others were never more than figureheads at their best—a few, absolute pirates. The hugest and most cumbrous of these old three-deckers, which threatens the cables of all the slighter modern frigates in the roadway every time the nor'easter of public clamor blows into the harbor, is the belief that education is solely a matter of what we are pleased to term the mental and moral qualities and that the teacher has no responsibility for or concern whatever with the physique of the scholar, except to see that his methods of instruction do not absolutely or seriously injure it.

There could not be a more damnable heresy. And yet it is one which underlies most of our popular systems of education. It is assumed that the cart will go all right if we can only keep the wheels spinning brislky

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in the air. The whole of the drill, discipline and labor of them is expended upon the nervous system, with not only no provision for the development of its only basis and support, the muscular tissues, but with a total disregard or violation of the conditions essential to their well-being. They cultivate the flower and ignore the root. Their theory is that the mind is a distinct, self-existent somewhat and can be trained as such, while the brain exists merely to serve as its instrument and tool, and the muscular system was created solely as the dull slave and burden-bearer of the lordly brain: a creature, which is at best a necessary evil, whose name ought hardly to be mentioned in refined circles and whose existence at all is, on intellectual and moral grounds, to be deplored.

The most fervent aspirations of the scholar, the moralist and the mystic in all ages have been to get rid entirely of this "clod," this "clog," this "prison of clay," the "body of this death," which "clod" aforesaid was by far the best thing about these dreamers and full of grander possibilities than anything they could imagine outside of it. Even their dreams were a part of it, though I don't know that this is much to its credit. Merely one of a thousand illustrations—how often, alas, the impulses and longings which men regard as their highest and noblest are really their most childish and selfish. The best things we do are those we do by instinct and impulse. Figuratively, this conception of the relation of mind to body has some truth in it, physiologically, it is the very reverse of true.

Ask any embryologist or comparative biologist and he will tell you that "nerve-stuff" is originally developed and afterward supported merely as a means of communication on the part of the muscle-cells with one another and with the outside world. That it is a servant of the muscles instead of a master and absolutely dependent upon them for support. That cell for cell, it is doubtful whether the muscular is not the higher tissue of the two, in originality, independence, complexity of cytoplasmic structure and importance of function. Certainly, contraction is as much of a mystery as thought. That brain would be not only utterly helpless but could not even exist without muscle, while muscle could get along very comfortably for a considerable time without brain. Brain without muscle is as dead as "faith without works." That thought is merely a property of grey matter and in reality two-thirds muscular action. Absolutely all expression of it is such. That the muscles are the sole producers of animal heat, the only tissue which lifts us above the snakes and fishes. Further, they are not only the sole producers and providers of food for the whole of the body-tissues, but also the ultimate seat of digestion and exudation; not a nerve or a sense-organ which can absorb a scrap of nutritive material until it has been prepared for its use in the stomach-crucible, the muscle-cell. In short, that by far the most useful, important and complex element in the whole body-mass is the lowly and despised muscle-stuff. Literally "the stone which the builders rejected, the same is become the head of the corner," in biology as well as in theology. What recognition of this vital and important interdependence is to be found in our popular system of education? Practically, none at all; muscular development is officially ignored, often discouraged and at best, barely tolerated.

The origin of this state of affairs is not far to seek. Nearly all our

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educational systems and methods are more or less remotely of priestly or ecclesiastical origin and were, until of comparatively recent years, largely in the hands of the church. Their neglect of physical considerations is merely the survival of the old monkish and mystic contempt for the body and determination to mortify the flesh and its affections. The reason why this absurd and childish conception has not long since been outgrown or resulted in serious injury to the race, has been that until of late, its application has been limited to a mere fraction of the years of childhood and to a comparatively small portion of the race. Up to twenty-five years ago the vast majority of children both here and in Europe spent, on an average, not more than three or four months per annum from their sixth to their thirteenth year in the school-room; many of them scarcely getting a year's "schooling," all told, during the period. Since then, however, the various state boards, national and imperial free-school systems have grown and flourished like green bay-trees until now the luckless *enfant du fin de siecle* is expected by parents, public opinion and the government to spend from six to nine months of every year from his fifth to his sixteenth or eighteenth within the walls of a school-prison, while some eager parents are even guilty of the senseless brutality—and I use the terms advisedly —of thrusting their toddling innocents into the iron grasp of this heartless system before they have got well enough acquainted with their mothers to speak their language plainly.

An almost entirely new (and unprecedented) condition confronts us, and our methods *must* be modified in some way to meet it. The mere fact that they have worked well, or more correctly, done little harm in the past —for it must in candor be admitted that fully as many men have succeeded without them as with them and thousands of the latter in spite of them rather than by virtue of them—is no guarantee, whatever, for their efficacy in the future, in view of the radical change which has taken place.

This brings us to the question: "What is education, broadly considered?" Is it not the development of our faculties by contact with our environment; the training of eye, ear, head, hand and foot, not merely in the school-room, but in play, in work, in war? And this training, if we consider it carefully, we shall find to consist, surprising as it may seem at first sight, mainly and fundamentally of voluntary muscular effort. The baby begins it by making play with his chubby little fists, striking them against one another, occasionally against his insignificant little nose, hitting himself in the eye, thrusting them into his mouth, and thus develops an idea of externality, of *non-ego*, of space-relations, of directing his movements, of the relations between things seen and things felt. Later the same busy paws are used to clutch everything coming or left within their reach, from spoons to stove blacking, and thrust it into his one great criterion of value—which continues to be so all his life long in many cases —his mouth. Then comes the long and determined balancing struggle resulting in the first of the two great intellectual movements of his life—learning to walk. Finally the little, but oh, how formidable, group of muscles around the vocal cords succeed by dint of incessant effort and much swearing in getting one of the telephone girls in the brain-exchange (M'lle Broca, frontal divison, "No. 3") trained to give them their connections

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properly and speech is achieved. Here "man becomes a living soul." *Homo-troglodytes*, charming, irresistible little kitten that he was is gone and *homo-sapiens* takes his place. Now what has been the sole voluntary part, the one indispensable factor, the most constant and frequently present element in all this development? Muscular action.

Arrest that child's muscular development at any point and its brain development ceases at the same level. Lack of muscular power is not merely a symptom but a *cause* of idiocy. If an infant is born in such immature condition that its muscles fail to act and develop properly, its brain remains practically stationary. More than this, as you are all aware, an attack of infantile paralysis at any time during childhood affects not merely the muscles but the brain. If it involve a sufficiently large number of muscle-groups, the whole intellectual development is checked and the poor little patient remains a child at thirty. Even an affection of only two or three groups will often dwarf the mental powers proportionately. Still more significant when the right hand and arm are affected, the speech is permanently impaired, and this, remember, in a spinal disease. This general connection has also been demonstrated practically from a totally different standpoint. Systematic muscular training, especially of the hands and arms, has been applied to idiots and backward children, at first merely with a hope of improving their bodily health, but has been found to result in a most gratifying improvement not only mentally but also morally. So much so that it is depended upon as the main curative measure in some of the most progressive and successful homes and institutions for feeble-minded children in this country. Its value, even in insane asylums, is too well known to need more than mention.

Lest I may be accused of exaggerating the part played by muscle, I might add that one of the leading schools of psychology of to-day holds practically identical views, though on different grounds, while Prof. Louis James goes farther and declares that emotions are muscular actions or the recollections of former ones. Nearly all psycologists agree that connected or continued thought would be impossible without words (if any of you don't believe it, just try to pursue a train of thought for a few moments without thinking in words); words, of course, are speech and speech is a muscular action, which comes perilously near making thought the same. At all events there could be none without it.

There is but one proper basis for a clear, active brain and that is a strong vigorous body. That this is true individually (though there are, of course, exceptions to the rule) we have seen already, and it is none the less so nationally. Space forbids me to dwell upon this interesting question and I can only refer those, who are interested in it, to an article of mine in the *North American Review* for May, 1889, where it is considered at some length. Suffice it to say that those nations which have had the most powerful and beneficent influence upon the progress of civilization and have produced the masterpieces of art, literature, religion and government, have been also the champion athletes of the world. The records of Greece, England and Germany are cases in point. And from this point of view also we find ourselves facing a changed condition. Until within the last thirty years most of our children spent three-fourths of their time

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out of doors or in some active employment, on the farm, in the shop, in the garden, doing chores about the house, in fact three-fourths of their education was gained outside the school-room. And a capital arrangement it was. But now we have almost reversed the proportions of affairs. And a nice mess we have made of it.

The division of labor, the introduction of machinery, and the use of coal as a fuel, have worked a positive revolution. Our fruit and vegetables grow in truck-wagons, our milk in a dairy-can, and thanks to electricity and coal, the curry-comb and the good old wood-pile are obsolete terms in the bright dictionary of youth. The amount of manual labor which the individual is obliged to perform for himself and for others has been reduced down almost to the vanishing point. And we proudly call this progress and wonder why the rising generation shows such a tendency to develop cabbage-fashion, all head and stalk. Our public school system has practically monopolized the field and, I say it in all seriousness, if something is not done very shortly to modify its methods or limit the extent of its ravages, it will go far to exterminate our native-born American race within four generations. Its sole aim is to develop the child from the head downward, to build a house, Chinese fashion, beginning at the roof, to make the body-pyramid stand on its apex. We forget that the mind with its fragrance, thought, is but the beautiful rainbow-hued, velvety blossom and product of the lithe, active, graceful body and can no more exist without it than a floweret without its stalk and leaves.

Instead of sunny gardens for sturdy roses and hardy violets, our school rooms have become forcing houses for orchids which blossom, alas too often, only to fade. This state of affairs may be remedied in two ways, by reforming the methods of the school and increasing its scope so as to include athletics and give physical exercise its proper standing or by cutting down the influence of the school at least one-half and giving other influences a chance. Both plans of attack should be carried out, but the latter is far the more important.

Boards and committees and corporations are powerful things but they can't handle living, breathing goods to any advantage. Why, a syndicate or company can't even breed cattle successfully, still less develop race horses, and shall we trust public boards and committees to be the sole trainers of that noblest animal, man? The very best they can do is to conduct affairs on a fixed system of some sort and any sort of a system to which growing organisms have to be submitted is sure to cause friction somewhere. Any kind of regimental discipline which is applied to those extraordinarily plastic little creatures, our human flowerets and plants, is safe to chafe badly at some point.

We are altogether too fond of trying to do everything by wholesale in this age. We are shirring individual effort and throwing all our energy into an endeavor to do everything by "committees" and "organizations." If some "system" could be invented of hatching the coming generation in incubators, and raising them in squads at public expense, we would adopt it eagerly. Our Sunday school system is another example. For the quiet gentle teaching at mother's knee, to which we look back and to which all generations have looked back with grateful reverence, we sub-

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stitute the noisy "infant class" and "intermediate class" taught by gaudy cards, illustrated leaves, inane blackboard sketches and cheap clap-trap music. We would like to "organize" the millenium into existence. The public school is part and parcel of the same thing. We are diminishing and discouraging individual effort, expecting officials, government teachers and Sunday school teachers to try and make up for our deficiences.

By all means let us put the present system on a rational, physiological basis. Let the curriculum include athletics, dancing and work with tools (*not* to teach a trade but to develop intelligence). But the principal thing is, limit the school room to its proper place in education. Its principal duty toward physical development is a negative one, to keep out of its way, to see that it does not interfere with nature's great training school, far superior to any gymnasium yet invented—out door sports. Just give the children a chance to follow their own God-given inclinations. The first thing is to shorten the hours. Three hours "confinement with hard labor" per diem is as much as ought to be imposed upon any healthy, growing child. Let him spend the other half of the day in nature's school —the open air. Considering her record and qualifications I think she might be trusted with at least half his education. Indeed, repeated experiments, by Dr. Chadwick and others, have shown that he'll even make more rapid progress in our superior methods, if we'll only give nature a chance to help us. "Half-time" children do more work and do it easier and better than "whole-timers." If we are too radical let the afternoon session be continued, but cut down to an hour or an hour and a half and occupied solely by singing, drawing, dancing and calisthemics.

Could we not also with advantage take a leaf out of nature's book in our actual teaching methods? Teach more by objects instead of names, by facts, instead of symbols. Stimulate curiosity and interest the senses to develop powers of observation and reasoning instead of pouring in "facts and figgers" like lard into a bladder, thereby distending rather than nourishing. Take the children at least once a week out to some river, wood, hill, sea coast, quarry or mine in the neighborhood, try to answer a few of the questions that will come pouring in upon us and choose all sorts of "living texts" for sermons upon geography, botany, geology, astronomy, zoölogy, etc., in language adapted to their comprehension. Next day ask them to write down all they can remember of what they have seen and heard. Even the most "practical" mind must admit that they would "learn something" every trip and what is vastly more important would get a training in observation, memory, reasoning and power of expressing themselves; and develop a love of nature which would be simply invaluable. It is true that our teachers would have to be much better educated in order to carry out such a scheme, but that would not be the least of its advantages.

Another thing we, as the medical advisers of the community, should insist upon, and that is that at least half as much money be expended upon play grounds as upon buildings. If I were to choose for the rising generation between a school house without a play ground or a play ground without a school house, I should unhesitatingly prefer the latter. What young

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America needs to-day is not more brains, but a decent muscular support for those he already has. How to secure it is *the* urgent problem of the future.

DISCUSSION.

DR. J. M. EMMERT. *Mr. President;*—This is too important a paper for us to keep quiet in regard to it and give it no discussion. This Association cannot afford to have it to go out that such a paper as just delivered by Dr. Woods Hutchinson was read before this Society and was passed by without discussion. It opens up a field of investigation which is going to fall upon the medical profession, as the beginning and investigation of every reform does. There is not any question but what Dr. Hutchinson has struck the keynote in our American system of education; that is, I think, that it is a failure. If I understand his paper right, he has come to the conclusion that it has pretty well failed to perform its purpose. And I believe as he does, and have so believed for several years, that if we keep on in the same line of educating our children as to-day that in fifty years from now we shall drive the American out of the field of education entirely. In other words we shall exterminate him. It is time for somebody to inform our educators that the child has more than one organ. They treat it to-day as if the child was made up entirely of brain or thinking power—of but one organ. I say it is time for somebody to teach them different; that the body is composed of something beyond brain matter that needs development; that when you develop one organ at the expense of the balance you make an abnormal body. You cannot keep up the system of cramming, as we have it to-day in all the public schools, and develop a normal body. You may make bright men and bright women for the time being, but they are abnormal; they have weak bodies; they may have strong minds—still, I don't believe that, because I believe it is impossible for a bright, brilliant, strong mind to be in a weak body.

Now I believe just as Dr. Hutchinson does, that our system is entirely wrong; that we ought to commence to build up the muscular system. Let us turn around once and see if we cannot make our children better; make them better citizens by giving them stronger muscles, better stomachs, better kidneys and better livers, and let us let the affairs of the brain alone for a little while, especially in the early history of the child. Our public school system to-day starts the child to school at five or six years of age, but starts him on a race course from grade to grade, and unless he is able to keep up, he is discouraged and drops out entirely, and when he does keep up with his class all the time he graduates at fourteen or fifteen years of age; he is simply an anomaly; he is bright, precocious, but physically he is a failure; mentally he may prove a success, and I want the members of this Society to discuss this paper and I would like to see the discussion go into the public press. I am not, as a general thing, in favor of that, but I want the school boards all over the country to understand that the medical profession has proclaimed that our boys and girls are not alone bunches of brain matter and nerves; that there is something else to develop besides that, and I hope they will say to them in no uncertain terms, that unless they change their system of education, unless they can put physical

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culture in their schools, the common schools, the town and city schools, that the time is not very far distant when their system will prove a system which I, in my judgment, think it is to-day. Now, there is not a physician in this house but what can call to mind young girls, who by the time they have arrived at the age of puberty were hysteric. So much so that when they would come home from their school they would lie down and weep, go to bed, probably, nervous and excited, and tumble all night; get up in the morning and probably cry again over their books for a few hours, and that is the condition they find them in before they graduate. As a general thing, when they do begin to menstruate you have all the nervous phenomena following dysmenorrhea and nervous condition, anemic condition, and I say that not one of those girls are in a condition after they have passed through a series of ten or twelve years in our public schools that are able to become mothers, that are able to become mothers of healthy children. I say here is where the great trouble is; here is where the danger is; our mothers are broken down, and they are simply broken down in our public schools before they become women, and they don't have the time to rally, if disease do not set in before they do rally—I say they do not rally until they marry, and become invalids from that time on until death. You cannot expect that kind of maternity to have healthy children, you cannot expect them to have healthy families, and if a mother is in that condition and does have children, those children are going to deteriorate, they are on the descending grade both physically and mentally, and I contend that if we keep up this cramming condition or treatment of our children in our public schools, it will not be very long until our insane asylums fill up much more rapidly than they do at the present time.

Dr. C. M. Hobby. *Mr. President:*—I think we have all of us profitted by the paper read by Dr. Hutchinson. I am glad to hear the note of warning sounded with reference to our public schools. I, too, believe that the graded system of public schools, as conducted at the present time in most of our cities, and I say it advisedly, is a failure. It is a failure in this, that it is not reaching the effect aimed at; not accomplishing the result of the healthful training of the young. We find when the pupils leaves the public schools, that instead of accomplishing that training which we desire our children to receive, that they have an arbitrarily acquired system of succeeding from one class to another; following from one class to another in the pursuit of certain laid out portions of the course of instructions, but that no consideration is paid to the individual, and it is this neglect of the individual, this loss of individuality in the pupil of the public schools that the great difficulty lies and the results come. Instead of a child being considered, each one by itself in its physical and mental requirements; instead of a course of instruction being conducted for the particular pupil that is to be instructed, we have a course prepared to which all are invited to give their attention equally. The brighter student is repressed, the laggard is urged forward and the attempt is made to suppress that which nature has implanted in all of us, the desire for individuality. It is to make an average pupil that the present system is conformed at present; to make an average student of every one that is not, and I am glad that

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this warning has gone forth and fully endorse it as to the public health of the schools. I hope this will go forward and I hope the physicians will go home and use their influence to bring about a better condition in these respects.

DR. A. W. MCCLURE. *Mr. President:*—I want to say a word or two on this subject, because there are others who desire to express an opinion and can do it far better than I can. In fact the whole ground has been gone over quite fully in the paper, and I trust it will go out, not only to the members of the profession that they can read a pointer in these things, but to the public school boards and so on. I did not hear the entire paper. While I may disagree with some of the theoretical notions put forth by Dr. Hutchinson, yet it is a very valuable paper. Now, the body of man has to be fed on proper food, developed by proper exercise and by proper development of all the physical organs. The mind has to be fed just as well as the body. There are certain kinds of food that develop mental power, and it is a healthy development. It is along the line of scientific research; accepted truth and knowledge, that we call science, which is nothing more than systems of truth and knowledge. Now, if the mature mind, after educational development is fed on that kind of food, along that line where we have healthy mental power; if we go out of this and feed on poor food, we have poor mental development. If we feed on this kind of mystical knowledge—this that is outside of the line of truth—recognized truth and knowledge, we have an unhealthy mental development. Hence you see all these people that go off after these kinds of food, Christian Science, and so on, set into that mystic region that has no guiding point, no scientific basis. We are standing on perilous ground mentally, feeding ourselves for asylums, and all that kind of thing. Now, it is just so in regard to moral development. There is a power in man, we may theorize as much as we please, but facts are ahead of theories often. We know the kind, or we have an idea of just the kind of food and physical exercise that will develop a healthy physical organization. It is not hard to see the kind of education, the kind of work, that will develop a healthy mental organization; it is not hard to see the kind that will develop a healthy moral organization, if we can just educate ourselves in that line. Purity of thought, purity of conduct, charity towards all men; improving the condition of our fellow man morally. All that kind of moral development, purity of thought, and action, and conduct, develops a healthy moral man, and we must keep along in that line of education if we would have a perfect moral, mental and physical development. Now, Dr. Hutchinson has touched on this matter of the education of little children, children in our schools, which is all correct. The profession wants certainly to take the advance in this kind of work. Our educational system is a failure. This paper, and such papers, now should go into the hands, not only of the profession to study carefully, but into the hands of public school boards that they may be advised. Now, one trouble is, the school boards need some literature on this subject, and if we could get our school boards to establish a little library—and I should insist upon that—and our city councils, educating them on the matter of hygiene, and our school

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boards in the matter of conducting our public schools. They must be educated. The school boards are patient, honest, dragging along and trying to do the very best they can for the education of our children, but of course they are ignorant as to their duty—they are a failure. Now, if such papers as this were in the hands of our school boards—some literature of that kind—they would take it up and we could look for some improvement. If the profession would put in the hands of the school boards such literature as this paper of Dr. Hutchinson's, and other papers of a similar character, that they might read, we would soon develop a better state of affairs. That is what we want, and it is our duty to put in the hands of the public school boards just such papers as these.

Dr. H. L. Getz. *Mr. President, and Members of this Society:*—The paper read by Dr. Hutchinson is a most excellent one; there can be no question about it. The remarks made have all been good. We are apt, sometimes, however, when we catch a new idea, to drift away with it. I have had some experience as a member of a school board. Twenty years experience in the profession as an observer and interested in children more that in adults, I would always rather have the kindly feelings of a child than that of an adult, if we could but have the one or the other. It seems to me that in times past, when I have heard so much said about the overtaxing of the brain, that it is not the regular work that is apt to do the mischief, in the majority of instances. I mean the regular school work of our public schools at the present day, but a lack in the direction of the child's surroundings, exercise, sleep, food, etc., outside of school hours. I cannot believe that six hours or seven—and most of the children do their work in the school room—can do the great mischief in the majority of instances, but, as I have already said, it is lack of proper direction on the part of parents and on the part of teachers and superintendents of schools to see that children are directed and instructed in the manner of exercise and the occupying of their time outside of school hours, and I am a great believer in pure air, sunlight and what well-directed exercise will do outside of the school room. Not only outside of the school room, but here comes the important matter. It has been remarked that school boards do their best to-day in the matter of directing the interests of children. That is perhaps true. And it has been remarked that they were ignorant and incompetent. That, also, is true, in the majority of instances, and it is in the school room and in the management of sanitary and hygienic matters, as well as outside that we, as physicians, must come to the rescue. So much do I believe this that, for several years past, I have had in mind to present a resolution, and I say now, if I am spared my life another year, you may expect a resolution to be adopted by this Association, and I hope to get the help of the State Board of Health, to this effect: "That every school board shall have a regular practicing physician as a member of that board." You may select him, if you like from the—take the physician who is the local member of the board of health, the local health physician, or, perhaps appointed by the State Board of Health, and that physician shall be competent, and he shall direct everything that relates to the hygienic and sanitary features and measures within the school room, and the board

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shall be governed by his direction, and there shall be only an appeal to the State Board of Health by the local school board if they reject his direction. I expect to present a resolution to be adopted and to be presented at the meeting of our next legislature, to have enacted a law of that kind, and I hope to get the influence of this Association, as well as that of the State Board of Health, to have enacted such a law. [Applause.]

DR. C. SNOOK. *Mr. President:*—I am very glad that this matter has come up, as I endorse the most of what Dr. Hutchinson has said, and yet I think that Dr. Getz has come nearer getting at the gist of this matter. Now, I feel competent to speak upon this. I have my knowledge of this, not only as a medical man, but from long service as a member of the school board, and a good part of that time of service, as the presiding officer and managaging director of the schools in our city. Some twelve years ago, having a child that was almost ready to go into school, I recognized the unfavorable condition of our schools, and I quietly, in my work with our people, talked over those conditions, I enlisted one or two of our other physicians in the matter and, as a result of a few months talk and agitation of that matter, our people saw fit to place me on their board, and there I have continued ever since; and I want to say to the physicians here, if they will come to our place and visit our play grounds, our school houses, sit in our schools and see the exercises carried on, see the whole work of the school, they will find that the health of the scholars is not neglected. And I want to say to this Society of gentlemen that the fact of our school system being detrimental to health and the failures of it are recognized by the school boards as well as by the medical profession of the State; perhaps not in as intelligent a way, but the school boards are alive to the fact and they are ready to receive instructions; willing to get it, anxious to get it, and doing what they can. The worst obstacle they meet with in making these reforms that are necessary are from the people themselves; the parents of the children do not know, are not properly educated and informed in this matter. The greatest proof I have seen of a failure of this matter is in the employment of teachers. I have seen a teacher, or applicant for a place as teacher, from time to time rejected by our board and have known them to be rejected by others simply because they did not possess a good physical make-up. We have in our schools twenty teachers, and among these are two gentlemen, either one of whom will measure over six feet, muscular; powerful fellows, and I would challenge any city in the State of Iowa to produce any two better teachers; and, I tell you, that to-day with our board, puny, ill-developed teachers cannot get a position, no matter what additional qualifications they may have. Our corps of teachers is the pictures of physical development. And, not only with our board, but I think that the school authorities over the State, more especially in our cities, of late years, I think physical developments are one of the prime qualifications that procures teachers places.

DR. FIELD. *Mr. President:*—I want to say that this is one of the most important subjects that has been sprung in this meeting and this paper one of the most beautiful and impressive that I have listened to in many a day. There are two or three facts that I want, briefly, to associate with

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the sentiments of this paper. One is the predominance in all our business affairs in the city of men that have been raised in the country; men who have followed the plow in their early days; who have fed the pigs, taken care of the stock early and late and who have developed themselves and who have thus prepared a foundation upon which to build. They are not the men who have had the business advantage; they are not the men who have been crowded forward in hot-beds and in steam-heated homes and all that sort of thing; they are men who have taken care of and developed themselves, and have made the best of small advantages they have had in the way of education. That sort of men largely predominate in all of the business enterprises of your cities and towns. Now, what has become of the large majority that have been raised in these cities and towns? I am sorry to say that they have withered and gone out of sight; many in premature graves, and often have never been heard of after they are out of school life. Another thing I want to call your attention to is the failure of the men who have stood in the foremost ranks of college classes, with large opportunities before them, with money and influence to push them to the front. As soon as the college life is ended they fall back into obscurity and then the mediocre comes forward and performs the duties, not only in the college, but in the business affairs of the community. Now, gentlemen, from this I just want to briefly allude to a suspicion that I have that there is something the matter with our advanced civilization; with these steam-heated homes, these culinary performances in the kitchen that prepare the food for digestion without even mastication; that have apartments that are so perfect, so well provided with means of keeping out changes of temperature, and all that sort of thing, that the ventilation is imperfect. I do not want to take up your time, but I do think we ought to think in connection with the facts presented on these lines; I do think we ought to study somewhat to assimilate our advanced civilization to the condition of things which prevailed where the strong men are developed. [Applause.]

Dr. D. S. Fairchild. *Mr. President:*—The question seems to be whether the race is deteriorating under our present system of education. In my opinion, that is not the case. Now, it is contended in every direction that the educational course in colleges should be advanced, if anything. The tendency in every place is in this direction. Now, it would be quite impossible to meet their requirements if our educational period is to be cut down very materially and, hence, it becomes necessary that the educational plans shall be commenced early and prosecuted with some correct system to this higher grade; not only in college matters, remember, but in professional matters, also. Now, it is a question whether these cases of hysteria, which have been mentioned, these cases of physical decay, nervous and broken down, are due to our present system of education, or whether due to some other cause; whether, as practicing physicians, we meet with more cases of troublesome hysteria, troublesome nervous diseases, among those who have had educational advantages, than among those who have not had them. Now, it seems to me that my observations have been that the most troublesome cases of nervous difficulty have

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come, not from the class who have had educational advantages, but from the people who have had no sort of mental culture. Now, is it a fact that our insane asylums are filling up with men who have been trained in our schools and colleges? Isn't it a fact that the insane asylums are filled with people that have not had any sort of mental training? So then the question is whether this system of public school-houses is laying a foundation of deterioration, and it seems to me that the experience of the past does not support it. The question is whether the educational plan adopted in New England fifty years ago was better—was followed by better results than the educational system adopted at the present time. Experience seems to be in favor of the present system of education. It is not merely an opinion as to what theoretical relations may be, but it is a fact based upon experience of many years, and while there may be overcrowding in schools, and likely there is, nevertheless, I do not think we are in a position really to adopt any special theory that will change very materially the present system of public school education.

DR. WILLIAM WATSON. *Mr. President:*—I did not propose to say anything upon this paper, although I fully appreciate its importance, and I, as an individual, thank Dr. Hutchinson for bringing it before this Society; but I think some of us are looking upon this in an incorrect manner. We are looking to the results and we are going to cure them. Now, the doctor's idea, if I understand it correctly, is that we should understand the cause. What is the cause of these diffiulties? Dr. Fairchild has spoken of these cases of hysteria, these cases of nervous difficulty. What do you do when you get a case of nervous difficulty? Do you immediately apply something to quiet the nervous system? Well, you can find any quantity of it in the market, and you will retain your patient for a certain length of time and somebody will get it to go over another set of remedies, and the poor invalid will suffer all the time. Suppose we go to work and find out the cause—what causes this nervous state? I think the doctor is on the correct line. We want something to build up the nervous system. Your telephone gets out of order. What do you do? The very first thing you do, you have some one to examine the battery to see whether there is a current there or not. He does not go to work and trace a wire all the way down, but goes first and examines the battery, and he finds the battery weak. What does he do? He goes to work and replenishes the battery. We find the nervous system weak and what do we do? The doctor suggests that we nourish the muscular system, and that will supply good blood, the nervous supply is strengthened and the patient gets well without any nerve remedies at all. There we get at the cause of the thing. And we are, also, getting in the line of applying the remedy. The next question with us practitioners is, how are we to apply it? There is no question, I think, in the minds of the majority, but what there are defects in the school system, but, as the doctor says, we hear a cry on all sides for higher education and better qualifications. We will hear, and hear it more than once before this session is broken, "How are you going to get at it without you cut down the preliminary work of the student?" Dr. Field struck another chord, and that is, "Why do you

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find in all your cities the men who are taking the lead, who are at the top and at the bottom," and the main props in all your business transactions? Why do you find your recruits in the country? Why don't you find the child, the son of that rich father, who was raised in luxury, among the leading men? Because he has not got the physical system to back him up in it. And the doctor here struck another chord that, for a good teacher you want one that has got a physical system to properly direct the brain, and if you don't have it, you may have a brilliant but a short-lived and unevenly developed person. Now, the one point I want to touch on is this: How are we going to apply our influence to remedy this matter? I think our best course is this: As the family physician you are called to a child, or called to a girl just approaching puberty, or you are called to mere boys that are manifesting some symptoms of unpleasant practices the mother is fearful of, and you immediately inquire how that child is nourished; how much exercise the child gets; whether that child goes to bed in time to get a good night's rest, or whether it is allowed to remain up until nine, ten or eleven o'clock when it ought to be in bed earlier. You go to work there and with your muscular remedy and your rest you invigorate and furnish good blood to the brain and the nervous system is not so rapidly exhausted. And, while we want to exert our influence on school boards on all those questions, at the same time we want to commence, as one member said, with the parents. There is where we can do it, and if each can do it in six, eight or ten households, they each will reform his neighbors and the neighbors are what make up the State.

Dr. J. B. Hatton. *Mr. President:*—I want to congratulate Dr. Hutchinson upon his splendid paper; not only the ability of it, but the brilliancy of its expression. It is an able paper. It shows deep and profound thought, and it is a paper that ought to call out the best thought of this convention of intelligent physicians. Now, while I say that, I do not agree entirely with the deductions of the doctor, or all of the conclusions to which he arrived, I do not look upon this condition from the pessimistic standpoint that he does. Now, it is true that we have excellent public schools, and Dr. Fairchild expressed my views almost entirely upon this subject. I want to pay my respects to Dr. Field's premises. I disagree with Dr. Field. It is not the uneducated men to-day that are conducting the great enterprises of this country. It is not the uneducated men of to-day that are the greatest physicians and the greatest lawyers according to my reading. We take to-day the three best educated nations in the world, England, Germany and the United States, and you compare their muscular measurement with any period of the Roman Empire, or the Greek, and they compare favorably with them. We are going too far, it is true, in the development, possibly, of the brain, but we are not, I think, as my friend, Dr. Emmert, expresses it, thoroughly on the downward road to entire failure of our educational system. I do not believe that. Now, there is a point that I have insisted upon for years; insisted upon it as one of the great defects of our system of education, and that is study after hours. That is one of the defects, and you will find that this system of cramming, as Dr. Emmert expresses it, includes this idea of a pupil, a

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little child taking home its books at night, in order to be prepared to recite the next morning, by taking that from rest, or taking it from exercise in the evening and sometimes this study goes into the hours of night. We are all aware of that, and it is a defect, but, so far as manner of teaching school to-day is concerned, with the modifications that we can easily engraft upon them, I do not think that our system is a failure by any means. I cannot feel that it is a failure by any means. I say to you to-day, that we are progressing and there is not a nation—with all we can say against our system of education, physical development, or whatever it is—there is not a nation, to-day, that can produce a better class of men and women than the American nation can. I feel that, but we must look at these things from the standpoint of reason and the pendulum of reform always goes to the extreme in one way or another, and so it is in education, but let us not sweep this all away and have all playground and no school. I think that would be very impolitic.

DR. J. W. SMITH. *Mr. President:*—I do not rise at this hour to discuss the excellent paper of our friend, Dr. Hutchinson, but to add a few things. I think it is particularly fortunate that the paper was presented in such a fortunate shape and I am glad to see so great an appreciation of the importance of the subject. As I said, I would like to add a few things. I think, as a representative body, we can do very much to cure some of the evils that we have heard about. It has been my fortune to be a school officer and, in earlier life, a teacher, and to be a parent and have a number of children grow up, so that my attention has necessarily been called to this thing from different standpoints. When my children were young, I adopted a system of my own, and that was that they were not to be sent to school to be spoiled by that sort of thing. My oldest child did not go to school until he was eight years of age; I did not teach him the alphabet and to read until he was seven. Some of the younger children were sent at an earlier age, but to remain in school only one-quarter of a day at first and next year one-half, and next three-quarters, and so on. We had one principal of our school who thought that was not the way to do business; he feared that it would break up the school arrangement, but it did not.

During my first summer in Iowa, I called, by invitation, at the house of a New England woman, and, while there, she called upon her little six year old daughter, and only child, to show me how well she read. She was an only child and when the reading was through, she expected something from me, and she had it. I told her it was beautiful reading, but to me a fearful sight. She wanted to know what I meant. I told her that a child so slender and so precocious would probably not live long. She was kept in a select school, upstairs, until she told her mother that she could not go up those stairs any longer. I was then called, and found it a case of tubercular enlargement of the mesenteric glands. She died in a few months.

I believe we must have harmonious development of mind and body to make a successful, a well-balanced man or woman, that will live long. We have heard here something with regard to large physical development.

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I put soundness before size. I believe that sending children to school too early and causing them to work too hard often dwarfs them in body and weakens the mind. I believe that harmonious development requires a certain amount of bodily exercise and that, in many of our higher schools, there should be a manual training department. In many luxurious homes they do not give the boys much physical exercise and, I am sorry to say, the girls do not get much either. We now have in some large cities and towns a manual training department in the schools. I believe there should be more of them. A boy or girl will make more harmonious development to have a certain amount of muscular exercise, and they will get some of it in that kind of a school, if nowhere else, and they will be interested in it. They should be credited for the work which they do in the manual training department, in the workshop, in the farmer's field, or for whatever work they may do in that department, the same as in any of the present studies. The effect might be to make manual labor thought quite respectable.

It has been my fortune, or misfortune, to see a good many individuals who have been through college that would willingly exchange all their education for that good health which they so much need. Within our own town in the last few years have been a number of cases where individuals, as the phrase goes, were educated to death. For instance, a young man seventeen years of age was carrying along a line of studies according to the graded system. Near the close of a term, an exhibition was decided on and he took part in that. That was the last straw that broke the camel's back. However, I do not think we ought to charge too much to the educational system, but take much of the fault to our own homes. I feel I want to congratulate this Society that this subject has come up, and I hope we will all go home and do a large amount of missionary work on this line in the future.

Dr. M. G. Sloan. *Mr. President:*—I think we will all be pretty certain to go away and leave the impression to go out from the discussion so far that our public school system is very nearly a failure. I think what we need is just a few changes in our laws and our public school system will do pretty well. I wish this Society could, in some way, influence the legislation of the State so as to bring about a law under which the earliest age at which a child should be allowed to go to school shall be seven years. I do not think they ought to go to school earlier than seven years. And, then, pass another law for paying the school directors, in order that they may get men who would pay more attention to this office and take more interest in school matters. I have been a school director for nine successive years and I find but one man that pays any attention to the matter. They say we cannot afford to fool away our time on it. I think with those two changes in our laws, we will have a pretty good school system.

Dr. C. H. Pinney. *Mr. President:*—I certainly agree with the sentiment of Dr. Hutchinson's paper. I am very much pleased with the manner in which the paper was read. I am, also, constrained to offer the thought that the etiology of this question has not been fully touched upon. We are always ready to jump at conclusions, when the alarm gun has been

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fired. It is very natural that every one should attempt to point out where the danger lies. I must insist that the danger does *not* lie in the source that—so far, I have heard—as yet pointed out. I am satisfied that the difficulty does not lie in our misguided school boards, nor in the training of the average teacher. Should you go into this matter and determine the true etiology of the question, (and I am satisfied that four-fifths of the audience will agree with me) that the difficulty lies right under the roof of the home of the sufferer. You can find, in every instance, people, men and women—more especially mothers—I regret to say, urging that the daughters shall be fashionable. Urging that their sons shall become prominent, without knowing what is necessary to accomplish that end, I think you will find that these children are, invariably, pampered and fed upon the richest viands. They are permitted to eat at all hours, day or night, and go to bed with full stomachs. Nine-tenths of these girls come out like houseplants. They remain in doors all the time, with clothing insufficient to protect them from the chilling effects of cold. You may as well expect to raise a healthy flower in the shade of your room, as a healthy daughter in your house, with the blinds closed and the sunlight shut out. More than that, they violate the very laws of nature. We know that cold is death and warmth is life, and when you put a child in summer clothing at a season of the year as cold as it was fifteen or twenty days ago, she comes out shivering with cold; with not sufficient covering on, simply silk over her shoulders and, possibly, no sleeves, and you must expect chilling of the blood to that extent you will get general deterioration of the vital forces. You will find, if you examine the condition of society to-day, this is one of the chief causes. Here is the daughter; there stands the mother; there is the grandmother, and there perhaps stands the great-grand-mother, and, if you will observe them in this position, you will find that we have the deterioration that is attributed to misguided teachers and school directors. You find that the daughter is not as strong as the mother at the same corresponding age; you find that the mother is not as strong physically as the grandmother at the same corresponding age, and so on. There is a cause for this: It lies in dress and fashion; it lies in this habit of indulging at the midnight hour, and violating nature's laws at home, as well as in the school. I am satisfied that the avenue through which this mortality comes to our homes is not in the school room altogether, but more commonly at the home. There are many points in this paper that are exceedingly interesting. I have been more pleased with many of the ideas connected with that paper than anything I have heard in many days. As medical advisers, and as the promoters of public health, it becomes our duty as physicians, *not* to jump at conclusions, and insist that the difficulty lies with the school board or in the system of teaching. I know full well the difficulties of cramming children and expecting the ordinary sluggish mind to be as astute and bright, to keep pace with the more brilliant and favored by nature. This is impossible, and it is a difficulty that should be remedied; but we should sum this whole question up and know whether we are attributing causes to the proper source, and, when we have done so, I am satisfied the school boards and the teachers will join us all with open arms and be glad to help cure the evil.

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DR. MAXWELL. *Mr. President:*—While this discussion has been very interesting, indeed, and has extended over a great deal of ground, yet we have other matters of interest that needs must be disposed of, and therefore, I move you that it be now closed.

DR. FIELD. *Mr. President:*—I beg the indulgence of the Society for one minute. I think Dr. Hatton misunderstood me. It is one thing to have an education, and another thing to know how to use it. I was trying to state that it was the rounded up, well developed, well educated people, most of them, that come from the country, that were found in the business of the country, but I did not mean to say it was the uneducated and the unqualified. That is not true.

DR. J. R. GOREELL. *Mr. President:*—In view of the importance of this paper, I would like to make a motion that the secretary be instructed to ask the leading papers of Des Moines to publish it entire. Seconded.

DR. FIELD: I wish to amend that motion by requesting the State Board of Health to publish that paper, either as a separate document, or embodied in their periodical. Seconded.

DR. GORRELL: I am entirely willing to accept that amendment, but I feel that it should be published in the daily papers.

DR. GETZ: As I have already remarked, this is an excellent paper and Dr. Hutchinson is a personal friend of mine and, though I regard him with the highest esteem in every respect, there is a difference of opinion in regard to the ideas advanced by him, and I would, therefore, move an amendment that the discussions be also published with the paper. This will give those interested in school work a better idea of the opinion of this Association, if I can get a second. Seconded.

DR. HUTCHINSON: I would like just a word: I think we ought to have some regard for the feelings of the suffering public in this matter and not tax them beyond endurance by inflicting both paper and discussions upon them. I am very grateful, indeed, to all my friends who have suggested that it should be published in the public press, yet I should prefer that it be sent out by the Board of Health. I would further agree, if that is done, that it shall reach the public in some form. I would a little rather that it would *not* appear in the daily papers.

DR. EMMERT: I have just as much respect for Dr. Hutchinson's modesty as any man in the house, but in the public press it will reach more parents than it can possibly do if published by the Board of Health.

DR. BALL. *Mr. President:*—I am not in favor, as a rule, of physicians rushing into print, and of medical societies appearing in public print side by side with such advertisements as Betts & Betts of Polk County. [Applause.] Now, I am satisfied that if the State Board of Health issues five thousand per month of the monthly and that these copies reach every health officer, and, I believe, every member of every board of education in Iowa and, another point; I am not satisfied to have this paper go out with the commendation of this entire Society. This Society may be competent to speak upon this question from one point of view, but this is a question, concerning which there are many differences of opinion. Now, we, as

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physicians, look upon this question from one side; the educators are not represented in this discussion; they are not represented in the paper, and I am not at all satisfied that our educational system is such a terrible thing as it has been pronounced by a number of gentlemen here; I am not satisfied that education ever killed anybody. I have known of a great many deaths, however, on account of ignorance, and I do not believe that the modern deterioration of the physique, that has been spoken of here to-day, exists. I don't think that, because you can go to some of the museums of Rome and find there some specimens of armor worn by giants, that the men of to-day are inferior to those who lived hundreds of years ago. We all know, and life statistics show it, that people attain a longevity to-day than they did a hundred years ago. Why? Simply because they are better educated and know the rules of health better; know how to live better; in other words, are better educated and I am certainly opposed to the publication of this paper in the daily press.

DR. RICE: I rise to a point of order. These motions are entirely out of order. We have a committee on publication and the Society can instruct that committee.

PRESIDENT: The point is well taken and is sustained. The only thing that is in order is to instruct the committee on publication.

DR. KIME: I move that the entire paper be laid on the table.

DR. BALL: I move that the paper be referred to the committee on publication. Seconded and carried.

DR. MCCLURE: I move you that the committee on publication be authorized to have this paper turned over to the State Board of Health and published and distributed? Seconded.

DR. EMMERT: I do not think it would be any extra expense to the State Board of Health to have this published in the Bulletin, but if it is to be published in pamphlet form and distributed over the State, I will state that the State Board of Health is not in a very healthy condition financially, and I think they ought not to be asked to publish this in pamphlet form. I think if the Society would request them to publish it in the Bulletin, they would be glad to do so, and that reaches all of the health officers of the State.

DR. GORRELL: I move you that the committee on publication be directed by this Society to request the daily papers—that will be without expense—to publish this paper by Dr. Woods Hutchinson. I believe that the people of the State of Iowa have a right to what was contained in that paper, and I think I know the papers would be entirely willing to publish it. Seconded.

DR. HUTCHINSON. *Mr. President:*—The extremely cordial way in which this paper has been received leaves me little to add, and I wish to say that I thank the members for the very cordial and kindly expressions with reference to it. However, one or two little matters have been touched upon which are really outside of the aspect of the subject considered. It is impossible to cover the whole field of physical education in one paper, nor did I attempt to do so.

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I have been accused, among other things, of being pessimistic in saying that the American race was going to the bow-wows. Now, I did not say any such thing. I do not believe it. After having given a considerable attention to the question, I believe the contrary is true, but my contention is that our present school system was going to land us in that direction and the signs of approaching danger are clearly manifest. I am well aware that home influences and surroundings are sadly in need of reform, as was said by my friend Dr. Pinney, of Council Bluffs, but I was merely approaching the subject from one certain standpoint as a physician. The worst thing about it is that the better class, in every sense, of our people, are being affected in this way, the intelligent, cultured, native born Americans. The farming element which, as has been said, is our great breeding ground, is rapidly moving into the cities and our American born people, especially in New England, are being literally "civilized" or "citified" out of existence. The Hub is now in such a condition that nobody can get on the police force without he has a brogue. New England brains, without proper support, have simply "petered out." New England to-day is a fair sample of what we may expect all over the country, if we do not call a halt. Our native born Americans become less fertile, less able to keep up their quota of the increase of population and their place is being taken by the sluggish, inferior Hungarians, Poles, Russians and Dagos, who are good people in their way, have excellent qualities, but are not stock that we care to graft on our national tree. They're a poor strain to cross with.

That there is something in children being properly trained at home, there is no doubt. I think by careful training, dieting, etc., they might be brought to such a condition that the system would not hurt them. But do they exist solely for the system or does the system exist for them? We may train a Kentucky thoroughbred to cover a mile in 1.45 at two years of age, but what sort of use is he in the stud at eight or nine? What sort of men and women is such a system going to produce? That is the question I want you to face.

I thank you for the cordial reception accorded to my scattered suggestions.

DR. GORRELL. *Mr. President:*—I wish now to renew my motion that the committee on publication be instructed to request the daily papers of this city to publish the paper of Dr. Woods Hutchinson.

DR. GETZ: I move you, Mr. President, to amend the motion that the discussion be also included, for the reasons that I have already stated, that there is a decided difference of opinion in this Society in regard to the matter, and it is but right and just and fair that the entire discussion be published if the paper is. Seconded.

DR. PINNEY. *Mr. President:*—I think this will add too much and for that reason it will not be carried out; and I hope that part of it will not carry.

DR. BALL. *Mr. President:*—I move you that the entire matter be laid on the table. Seconded. Carried.

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MEDICAL EXPERT WITNESSES.

BY JUDGE C. A. BISHOP, DES MOINES, IOWA.

"In legal acceptation, the word evidence," according to Mr. Greenleaf, a noted writer on the subject, "includes all the means by which any alleged matter of fact, the truth of which is submitted to investigation, is established or disproved." And again, "things established by competent and satisfactory evidence are said to be proved. By competent evidence, is meant that which is the appropriate proof in the particular cases for instance, as the production of a writing, where its contents are the subject of inquiry."

It is also said to be familiar learning, that witnesses who appear to testify in courts of justice must give evidence of facts—statements, oral or written, of what has actually occurred—and should not be permitted to edify the court or jury by extracts from their opinions. Mr. Justice Harlan, occupying a seat upon the supreme bench of the United States, gave an unequivocal expression to the prevailing idea by saying, "the general rule undoubtedly is that witnesses are restricted to proof of facts within their personal knowledge, and may not express their opinion or judgment as to the matters which the court or jury are required to determine, or which must constitute elements in such determination. To this rule, however," he says, "there is a well established exception in the case of witnesses having special knowledge or skill in the business, art or science, the principles of which are involved in the issue to be tried." The exception, you will observe, has application to that which is evidentiary in character; in other words, it relates to the means by which a disputed fact is sought to be established or disproved. The ultimate end is to ascertain the truth in respect of the disputed fact. While the demand is for facts, it does not follow that they should be established according to the rule laid down by Thomas Gradgrind in Dickens' "Hard Times." You will remember that he resolved all matters to a mere question of figures, a case of simple arithmetic. With a rule and a pair of scales and the multiplication table always in his pocket, he was ever ready to weigh and measure any parcel of human nature, and tell you exactly what it comes to.

The rule prevailing in courts of law and equity is, not whether it is possible that the testimony offered in support of, or as opposed to, any asserted fact, may be false, but whether there is sufficient probability of its truth. That is to say, "things established by competent and satisfactory evidence are said to be proved," and by satisfactory evidence is meant that amount of proof which ordinarily satisfies an unprejudiced mind.

The affairs of human life have grown to multitudinous proportions, and are almost infinite in detail. It is impossible, therefore, that any one man should become familiar with all subjects. To specialize is the rule

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and it is born of necessity. You who are before me to-night illustrate this, in that, by allegation at least, you are devoting your lives to one certain line of study and practice, having relation to one phase of human life. I, myself, by a similar courtesy of allegation, perhaps, represent another class of men engaged in a differing line of study and practice, affecting human lives and affairs in respect of another of the many-sided phases, time and changes have brought into existence.

It follows that in very many instances, in order that the truth may appear—and that is only another way of saying that the ultimate fact shall be reached—the necessities of the case call for opinion evidence, so-called, as otherwise it would be impossible for those called upon to decide a disputed fact to arrive at a fair and intelligible understanding of the matter in controversy. It is this that has given rise to the exception to the general rule which I have quoted from the opinion of Mr. Justice Harlan.

Now expert evidence and opinion evidence are not synonomous expressions. Much confusion has resulted from confounding those expressions, using them interchangeably, by learned courts and law writers even, and this has oftentimes given rise to somewhat of difficulty in determining to what state of facts, or to what conditions, the exceptions to the general rule has application. A witness may in certain instances give evidence in character an opinion, and, on the other hand, the question put to him may call for a fact within his knowledge, and in either, or rather in both cases, he may occupy the position of an expert. Take, for instance, a surgeon called upon to testify as to whether a skeleton produced before him is that of a male or female. Here he testifies as an expert, but his answer is not an opinion, but, in the accepted moral sense, it partakes of a fact. What caused death in a particular instance may be proven as a fact, or the question may be dependent for its solution upon the expression of an opinion. Take a man whose body has been pierced by a bullet. If an autopsy develop the fact that all the organs of the body, but for the wound, are in a normal condition, and a physician may say as a fact that the wound was the proximate cause of death. If, on the other hand, an abnormal condition of some of the organs is found, and the wound is not itself necessarily fatal, and you have a case where the cause of death can be ascertained only by resort to the opinions of those who are skilled in the matter of the effect upon human life of wounds and diseases of the character in question.

Expert witnesses may, therefore, be called to testify, as experts, to matters of fact known to them as persons skilled or learned in a particular trade, art or science, and not known to or understood by people in general, and they may be called upon as witnesses to give expression to their opinions having relation to a particular case stated in which is involved some principle of the trade, art or science in which the witness is skilled.

Let us look, for a moment, at the question, who may be called as an expert witness? An expert, as understood in law, is defined to be a skillful or experienced person; a person having skill or experience, or peculiar knowledge on certain subjects, or in certain professions; a scientific witness. As applied to a medical expert, the rule does not require that the witness should have acquired his education in any particular way, as that

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he was graduated from a medical college, or the like; it will be sufficient if it appears that by a course of previous habit and practice, or of study, he has become familiar with the science of medicine and surgery, or that particular branch thereof which is related to the question in issue. Having been shown to be possessed of a particular and special knowledge on the subject, his competency as a witness is established. How his education was acquired and the extent thereof, and of his experience, are matters to be taken into consideration in determining the weight to be given his testimony. Nor is it at all material that the knowledge an expert assumes to possess is derived wholly from the study of medical works, rather than from actual practice. Such fact appearing may tend to weaken the force or effect of his evidence, but it will be competent. The law, in this respect, takes no notice of schools of medicine, so that a regular, a homœopath, an eclectic, etc., etc., may occupy the witness chair and be heard for the enlightenment of the court and jury. It has not yet been authoritatively decided, to my knowledge, whether or not a christian scientist may have the theories which form the web and woof of his art or science, whatever it may be called, taken into account to influence the result of a judicial investigation.

I come now to enquire what may be the subject of expert testimony. Generally speaking, it may be said that the functions of an expert are to instruct the court and jury in matters so far removed from the ordinary pursuits of life that accurate knowledge of them can only be gained by experience, and to the end that the court and jury may thereby be enabled to judge intelligently of the force and application of the facts before them and upon which the case is predicated. I have already stated that an expert may be called upon to state facts within his knowledge relevant to the issue being tried, or he may be asked to express an opinion as to an ultimate relevant fact, and which is to be based either upon primary facts within his personal knowledge, or that may be stated hypothetically to him. When called upon to testify to facts within his personal knowledge the rule by which he is to be governed does not differ in any material sense from that governing ordinary witnesses. In common with them, he brings the knowledge of an existing fact to the consideration of the court or jury. He differs from the ordinary witness simply in that by study, habit or experience he has enabled himself to perceive, grasp and understand existing facts presented to him in person, concerning which the common mind has but an imperfect or perhaps an entire lack of understanding. I have already referred to the fact that sex can be determined from an inspection of a skeleton by way of illustration of this principle, and it will, I think, be sufficient to convey to you my meaning. In this connection it may be said, however, that it is not always necessary that the physical evidences of the fact should be within the actual knowledge of the expert; that is, he may testify to a relevant fact as a fact, independent of any particular case to which it may have application. This may be illustrated by assuming a question to be propounded to one versed in toxicology as to whether or not a certain drug was poisonous, and it might be carried even farther by a question as to the toxical effect of such drug, and the particular organs of the body affected by it. It may be said that such cases border closely

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on the line of opinion evidence, and it may be difficult to draw the line in many instances, and yet it is certain that it is altogether possible for a physician or surgeon to testify to resulting facts; certain primary facts, being either within his personal knowledge or stated to him; as that in the case of a dead body, presenting certain given conditions, death had taken place before a train of cars had passed over it, or some other outward physical injury had been inflicted upon it.

Opinion evidence of experts is said to be admissible whenever the subject matter of inquiry is such that inexperienced persons are not likely to prove capable of forming a correct judgment upon it without such assistance. It follows as a corollary that an opinion cannot be received in evidence when the inquiry has relation to a subject matter, the nature of which is not such as to require any peculiar habits or study in order to qualify a man to understand it. In other words, if the relation of facts and their probable results can be determined without special skill or study, the facts themselves must be given in evidence, and the conclusions or inferences must be drawn by the jury. One of the earliest cases reported in the books affords an illustration of the rule. Upon the trial, in England, of one Mahew, upon a charge of maiming, the accused prayed that the court would see the wound to ascertain if there had been a maiming. The court, because the wound was new, did not know how to adjudge, and the accused asked that the wound be examined by surgeons to ascertain from their opinion the fact in controversy, and it was done accordingly. So it is that in every case that in order that opinions of experts may be received in evidence it must appear that the inquiry is directed to a matter not of common observation, and that the witness brings, as an aid to such inquiry, a particular skill, the result of previous investigation of general truths or laws, bearing upon or related to the subject matter in question. Thus, "in case of death, the physician, from the examination of the body, or from the appearance of its parts, as proved by witnesses, or as seen by him, speaks as to the cause of death, as that it was produced by poison or by disease. In such a case, the substance of his testimony is, that those appearances, seen by himself in the body, or proved to exist there, either generally or universally have been observed to accompany death by such poison or by such disease, as the fact may be. It is the general or universal fact which science supplies to him, and which through him is made available to the jury." Take as a farther illustration a person supposed to be insane. The symptoms being personally known to the witness, or related to him he may, upon the principle I have referred to, express his opinion as to the sanity of the patient, and such opinion, if uncontradicted, may be taken as sufficient to support the conclusion of fact as to sanity. The subjects having relation to his profession upon which a physician and surgeon may give expression to opinion, is almost without limit, and I need not adduce farther illustrations to explain the rule.

Where the primary facts are personally known to him, as that he has observed the symptoms, or examined the patient, the medical expert may give expression to his opinion without any preliminary recital of such primary facts or symptoms. If he has no personal knowledge of the facts upon which his opinion is to be predicated, then his testimony

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must be based upon the facts stated hypothetically; that is, the court or counsel may recite the facts as they are claimed to exist, and may thereupon ask the expert his opinion taking such stated facts as the basis therefor; or the witness may hear the evidence of the primary facts, upon which he is to base his opinion, given or read, and, if the same is not conflicting, he may thereupon express his opinion without the intervention of a hypothetical question. If the evidence be conflicting, then questions stating the facts in hypothetical form must be put to the expert, as otherwise he would be called upon to determine from the weight of the evidence as it appeared to him, upon the existence or non-existence of some one or more of the primary facts upon which his opinion is to be based. The questioner may include in his hypothesis every fact for which there is any support in the general evidence, but he cannot go outside of the record and include in his question any conjectured or suppositious fact. Nor can the witness, in making answer to a hypothetical question, take into consideration any matter not fairly included in the question as put to him; for instance, he may not base his expressed opinion, in part upon the facts stated to him, and in part upon other facts known to him to exist, or supposed by him to exist. To state the proposition in a trite way, he must answer the question. Upon cross-examination of an expert, the rule requiring that the hypothesis must be confined to such facts as are admitted, or concerning which there is in the record some evidence tending to their support, is somewhat modified, and counsel may, in putting his questions, not only include facts of which there is some measure of proof, but he may assume any facts pertinent to the inquiry with a view of testing the skill and accuracy of the expert. This, of course, is not an unlimited right, and every trial court should confine it within reasonable bounds.

It will be seen that the rules governing the admission of expert evidence are, in themselves, quite simple and ought to be easily understood. In the great majority of instances where difficulty is experienced, the cause may be traced to sources having no connection with the rule itself. The antics of an exceedingly smart attorney, or the blundering of an exceedingly stupid one, has been known to unbalance many a staid and well-settled rule, and coming from the hands of such, not even the best posted physician or surgeon can always escape the conclusion that he has been made a party to a farce. On the other hand, the towering intellect of some young or old physician, who, in his own estimation, knows all there is to be known, and has never been mistaken and never expects to be, and yet who does not, in point of fact, know enough to focus his gray matter upon a simple question, and, confining himself to it, either answer it or say he cannot, is sufficient oftentimes to drive even the best of lawyers to the verge of despair. Take, now, either the smart, or the blundering lawyer, and turn him loose upon the very forward and all-sufficient M.D., and you have a situation in view of which the blind goddess presiding over the temple of justice might well drop her scales, pull the bandage from her eyes, and declare the curtain rung down upon the last act. In my experience it is rare that a level-headed lawyer and a level-headed doctor ever get into serious trouble where the latter appears as an expert witness. It is also my experience that whenever a seven by nine lawyer comes in con-

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tact with a six by eight doctor trouble is sure to follow. Now the fact is that when an expert witness takes the stand he has the right to have intelligent and intelligible questions put to him, and, on the other hand, the questioner has the right to expect an intelligent and intelligible answer; either that, or a plain statement that the witness cannot answer the question. The trouble with many expert witnesses is that they regard it as fatal to their standing and importance to confess to an inability to answer any and every question asked, or, as sometimes is the case, they seem possessed with an over-weening desire to air their knowledge and importance by the free use of technical phrases and words or terms, the meaning of which, the witness is tickled to know, the common mind has no conception of. Face such a witness with an attorney upon whom nature has been no more lavish in the distribution of her gifts, and you may expect an intermixture of comedy and farce, with perhaps a touch of tragedy by way of variation. I am, as you may perceive, not content to believe that any particular modification is needed so far as reputable and competent lawyers and reputable and competent doctors, brought into the relationship in question with each other, are concerned. I am convinced that the fool lawyers and the fool doctors are the ones that need looking after and regulating.

There is one other matter of which I should speak in this connection, and that is the idea, seemingly at least, too often prevails that a witness should, if possible, favor the side of the party calling him. There is no reputable physician but would scorn the idea that his testimony could be other than as the facts warranted, and yet I have known of cases where either jealousy, or an evident desire that a certain side should win, has apparently prompted an expression of opinion that under other circumstances would never have found its way into words. This trait, or whatever it may be called, is not, understand me, confined to expert witnesses, but is common to all classes. It is universally remarked by trial lawyers the country over, that very many witnesses of all classes and in all kinds of cases, seem to think as they take the stand that they are expected to justify the expectation of the party calling them, and that to fail in doing so would be the basest of treachery, or a species of high treason. I do not know that anyone has attempted to fully account for this moral phenomenon, and I have only time now to call attention to it without attempting any explanation. This I am convinced of, that so long as each party to every legal controversy has the privilege of calling as many and such witnesses of his own choosing, as he pleases, there is no likelihood of any radical change in the moral relationship which many witnesses bear, or seem to bear, to the cases in which they are called to testify.

Now I conclude that the rules defining what may be the subjects of expert evidence; to what issues it may be applied, and the rules governing its introduction are vulnerable to no serious objection. I conclude that the rules prescribing who may be called as experts, and defining the method of their examintion can be greatly improved upon.

My idea is, and I have time to present it in outline only, that all expert witnesses should be selected by the court. If the issues in a case, or the circumstances which may be developed upon its trial, are such that expert

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evidence is called for to secure a just determination of the controversy, let the court send out its summons for the witnesses. The court can be governed by rules in the selection of such witnesses so that no injustice may be done, as that in an action against a regular for malpractice in the treatment of a certain disease, physicians of his own school should be called to testify in respect thereof. It would be manifestly unfair that a homœopath should take the stand in such a case and *vice versa*. Besides one who employs a physician of a certain school ought ordinarily to be bound by the maxim *damnum absque injuria*, if the physician is shown to have been reasonably skillful according to the practice of his school. There may be, and I have no doubt are, cases where the treatment is not of a school, but, on the contrary, a means incapable perhaps of analysis, adopted by some scheming fellow to induce suffering humanity to come under his manipulations at so much per manipulate. In such cases, and indeed in all cases where it is fairly manifest a fraud has been perpetrated, all possible legitimate means ought to be open for its discovery and punishment.

Under the method I have suggested the court could first satisfy itself of the competency of the witness; it should then itself put to the witness all necessary questions—hypothetical or otherwise—as the circumstances of the case demanded; and, therein, adopting such suggestions from counsel as may seem proper. Following this counsel could cross-examine, within reasonable limits, and in connection therewith, and to test the accuracy of the witness, might call attention to such standard medical works as might have bearing upon the subject in hand. In cases of a material disagreement between the witnesses called, the court could call others, and until in its judgment the subject was practically exhausted.

I am satisfied that to the plan thus outlined many objections may be made, that is, there will be those who can see many breakers ahead, any or all of which would, in their judgment, be sufficient to condemn the plan. To this I have to say that no reform was ever started but that it was encumbered with gloomy predictions. There undoubtedly would arise conditions and contingencies in respect of which some variation of the rule might be necessary, in order that the truth might be known. That would not be strange; nor would it, of itself, militate against the plan, when it is considered that there are but very few rules to which it has not been necessary to tack a greater or less number of exceptions. In any event a better and more satisfactory method than now in vogue is needed, and I believe both professions affected demand it. If what I have said shall help on the agitation which must precede all better methods I shall be content; and this whether the plan ultimately adopted be the one I have suggested, or any other that gives promise of relief.

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THE DUTY OF THE PHYSICIAN TO THE PUBLIC HEALTH.

BY P. J. FULLERTON, M. D., RAYMOND, IOWA.

Mr. President, Fellow Practitioners:—In all ages which have preceded us the healing art has been considered the most benevolent possessed by mankind. There is none that has claimed to surpass, there is none that can equal it. Aye, indeed, so magnificent has it appeared that in the past it has said to have been coupled with Divinity. And even at the close of the Nineteenth century there are a few pretenders who claim that to Divinity alone belongs the power to give back to the pale cheek the bloom of health, to replace the broken bone, to return the wandering mind and restore the normal functions of the body which by disease have been led astray. If the theory of these vain illusionists were correct it would be unnecessary for this Society to have attached to it a section of state medicine or to exist at all. For if small-pox, diphtheria, scarlet fever, typhoid fever and other preventable diseases are mere illusions of the mind then what need of either curative or preventive medicine. The fact is that in spite of all theories we find these evils among us and it is the duty of the physician to be foremost in the warfare against their approach. Theories are beautiful, they are often woven with silken threads of thought, and just as often lead the untutored mind into the barren fields of ignorance, where it may languish and die. Medicine has always been foremost in the triumphal march of science, she has never faltered, she has never been accused of being a deserter, she is the first to attack and the last to yield. Honored as she has been in all times past, of late she has added a new laurel to her crown, on which branch is written preventive medicine. This in my opinion is one great stride in advance of the healing art, and the most philanthropic step in the whole history of medicine. It is indeed the step-stone on which the whole fraternity may rest secure from self accusation. By advocating the cause of preventive medicine, the physician is always working directly against his own pecuniary interests. This barrier deters him not, for he knows it is a instrument that belongs to the quack. They have long held a patent right upon it, and like the Bell telephone it seems that it will never expire. But the true physician labors faithfully on, for to have one life saved is more to him than to have many sovereigns in his pocket. The question for us to decide to-night is, are we all in this sense true physicians? From what I have observed from the condition of things in this Society from a somewhat intimate acquaintance with it for the past ten years, I am sorry to say that my personal opinion is that we are not. Heretofore the section of state medicine has been regarded with so little interest that it has always been placed on the caudal extremity of the program only to be listened to by the few and the faithful. We have been anxious listeners for days, with seats well filled, to the

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advancements made in some or other of the branches of curative medicine or to some new way of murdering the sometimes innocent little bacteria. Again it is some new remedy, quality and quantity, unknown, but it will cure many ills, therefore we listen with patience to the discussions of its greatness. We have also listened for hours to the discussion of some great surgical or gynecological operation, which perhaps not more than five physicians in the whole State will perform in a life time. But when the time came to call the section of state medicine, the officers had been elected, the banquets were all over, the receptions past, in other words of more modern times, "it was after the ball," which left but the "few and faithful" to talk to empty seats and the officers, and I have often thought, God pity the officers and give them strength to bear the trial.

However, this year is an innovation. Through the efforts of some of the "few and faithful" a stimulus has been applied to this section, whereby it has been enabled to ascend the caudal extremity and work its way well up the spine of the Society. We hope that a competent nurse may be employed at this meeting to aid its progress until it reaches the cranium where it may abide. I am free to assert that this section deserves the most important place on the program of these meetings. If there were no other reasons it would be enough to say that it is because a large majority of physicians need to be educated in this branch of the science. I am sure that if we were to ask the man who comes here for the sole purpose of airing his knowledge and advertising his special abilities (without violating the code) whether this arrangement is proper or not, that he will answer us no. I am equally sure that the true physician who realizes his duty to the public health and has its welfare at heart will answer us yes and give us encouragement to keep on with our labors. And I am equally certain that the latter are unhappily in the minority.

I cannot find words of commendation suitable for those foremost in this battle of progress. Their reward is due them, but they may never receive it. They certainly will not if cashiered on the old plan of settling accounts. Still there is much to hope for and much can be done to increase the usefulness of this section. To accomplish this the physician must be taught his duty to the public health. You will ask me, what are his duties? I answer you that every physician should be a well regulated board of health within himself, without the stimulus added by legislation. The family physician is almost an inmate of the household. He knows the secret vices and virtues of the sons and daughters and sometimes of the father and mother as well, all of which he faithfully retains. He knows their habits of life, he knows their sanitary surroundings, he is their confidant in all things pertaining to their welfare physically, morally and frequently religiously. He can in many cases, by his kind and gentle advice remove by a word in a moment, that which by process of law it would take many days to accomplish. Neither need he fear that by taking upon himself these active duties that he will be infringing upon the rights and emoluments of the health officer, for of all poorly paid public servants the "obnoxious" health officer receives the least reward for his labors. The family physician is frequently called to see some inmate of the household, and after his examination is made, and his prescription with all

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directions are given, he is confronted with this remark from the head of the family: Doctor that beastly health officer was up here yesterday and said our privy vault needed cleaning, or that we would have to call in the plumber to look after the sewerage, or that the back alley will have to be cleaned up a little, or what is far more obnoxious, "he has quarantined us." Now, Doctor, don't you think that health officer a fool, and won't you use your political "pull" to see that he be moved at once? It is very easy for the physician to reply that the health officer is a fool and is only working for mercenary motives, while in ninety-nine cases out of one hundred the mercenary motive is on the other side of the fence. By such injudicious action the physician frequently places himself directly in the path of sanitary science, neglecting his duty for the purpose of financial gain. Under such circumstances it is his duty to visit the condemned portion of the residence and in a kind and mild way tell the occupants that the existing circumstances are a menace to the health of the family and neighborhood, and that it is better to repair the evil before more is done. In this way we aid, not hinder boards of health. See to it then that each of us faithfully performs his duty by instructing the laity and aiding boards of health. Don't let mercenary motives swerve us from the straight and narrow path, don't let politics misguide us, if need be let us lay aside our creed for the time being and join the grand army of the commonweal for the public health, remembering always that sanitary science is still in its infancy and that many of the members of this Society are still in the A. B. C. class. Yet a few earnest, philanthropic women and men, without hope of reward on earth and not sure of recompense hereafter, are delving into the depths of etiology and prevention of disease. May their efforts be crowned with success here, and the bright jewel of charity be placed to their credit hereafter is my humble desire. The field of preventive medicine is almost an unbroken prairie, and it is the duty of every true physician to set "his plow in the stubborn glebe" that the weeds of ignorance and charlatanism may be uprooted and the beautiful plant of sanitary science propagated in their stead, and he who wishes to make a future Jenner of himself will do well to put his hand to the plow.

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HOW QUACK DOCTORS OBTAIN CERTIFICATES.

BY W. C. PIPINO, M. D. DES MOINES, IOWA.

One day I was sitting at a hotel table in company with a member of the State Board of Medical Examiners, when among other subjects that of irregular practitioners and their methods of advertising were discussed. I asked the question: "Why are these men allowed to practice; is there no way to prevent it?" "Of course there is," replied the member of the State Board, "see that your doctors don't recommend them, and we will not give them certificates." Imagine my surprise. Here then was the milk in the cocoanut. The thought that regular qualified physicians, members of the state and county societies, sworn to uphold the dignity of the profession and the code of ethics that is supposed to govern reputable members of the profession in their relations among themselves and the public, should be guilty of so base an act was indeed startling. Here, some of us have come from time to time, discussed the State Board and marveled at its actions, blamed the secretary for possessing a weak spine, and being of no earthly use except to draw his salary with mathematical regularity, and publish reports prior to the meeting of the legislature.

These and many more remarks have been uttered against the Board. I am glad to say, however, the blame rests not wholly with the State Board, but partly with the profession. When I made the discovery, I concluded to satisfy myself by examining the records and applications on file in the secretary's office. During the session of the last legislature I had frequent occasion to be at the capitol. On one of these visits I was accompanied by Dr. H. B. Young, of Burlington, when we looked over a few applications which at that time were at our command.

When I began my search I was surprised, and dumbfounded when I ended. I can readily understand and reconcile myself to the motive that prompts an irregular practitioner or one whose zeal in chasing the dollar is greater than that of protecting his honor in recommending a quack to the board, but when an ex-president of the State Society and a member of the State Board of Medical Examiners takes to signing applications for these itinerant mountebanks it is time we should ask ourselves the question, "whither are we drifting?"

Let me here entertain you with a few of my discoveries. The first application I examined was that of "Dr." Montague, a gentleman of doubtful pedigree and still more doubtful ability, who, when he first came to Des Moines, visited several physicians with the request that they sign his application and recommend him as a person of good moral character and worthy to practice medicine. In this he failed until he met Dr. W. S. H. Matthews of this city, who kindly relieved him in the hour of distress

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by signing his application recommending him to the board as a person fit, both morally and intellectually, for a certificate. Here I presume the doctor inquired into his moral character, and examined him as to his knowledge of medicine.

On turning a leaf we are confronted with the names of Betts and Betts, two worthies, one male and one female, who do not reside here but are represented by one Mershon, a paid stool-pigeon whose record shows an inability to make a living by legitimate practice. Betts and Betts were recommended by Dr. A. J. Cook, of Council Bluffs.

I have always entertained a doubt regarding the issuing of a certificate to one A. Polasky, an Austrian Jew, who claims to be an oculist of distinguished ability. He "cures granulated lids in from five to ten days." In Polk's Medical and Surgical Register, Vol. II, I find this statement: A. Polasky (R), Josephine College, Vienna, Austria, 1880. In the same work, Vol. III, I find this: A. Polasky (R)*. (The asterisk meaning no evidence of graduation). In A. Polasky's application to the State Board for a certificate, under oath, he deposes and says, that "he began the practice of medicine and surgery in good faith as a business at Des Moines, in the County of Polk, and other towns in the State of Iowa, on or about the 15th day of April, A. D. 1881, and continued such practice in said State of Iowa until on or about the 1st day of April, 1883, and he further says, that on or about the 1st day of April, 1883, he began the practice of ophthalmic medicine and surgery as a business at Des Moines, in the County of Polk, State of Iowa." On the opposite side of the application he gives the total years of practice as twenty-one. The application is dated the 28th day of June, 1886 Certificate issued November 25th, 1886, seven months after filing of the application. You can readily see the discrepancy that exists between the date of graduation, 1880, and the number of years practice. I understand the delay in issuing the certificate was caused by a doubt existing as to the applicant being a graduate of Vienna, having failed to present his diploma to the Board, claiming to have lost it at *sea*. Subsequent investigation developed the fact that no person by the name of A. Polasky ever attended or graduated from Josephine College. The secretary of the board said a certificate ought not to have been issued to the applicant. Then why was it issued? A foot note on each application is as follows: "If not already registered the applicant must do so before returning the application, as certificates will not be granted unregistered physicians." I have made a most careful examination of the physicians register in the county clerk's office and fail to find the name of A. Polasky registered there. Again the question, why was the certificate issued?

Next we come to a Doctor Stouder, a graduate of a physio-medical college, who served an apprenticeship in a pseudo drug store, its principal stock consisting of wall paper and boot-leg whisky. In five short months he was made a doctor, and received a certificate from the State Board upon the recommendation of "Dr." Mershon, the gentleman referred to above.

Here is another, his name is Dennis, Dr. Dennis, once partner and co-laborer with Dr. Stouder, originators and founders of the great

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National Medical Institute. Who recommended him? No less personage than our worthy friend and associate Dr. Louis Schooler. Shades of the departed! What a revelation!

We next come to the name of one D. Rea, a gentleman who makes monthly visits to this city. He has associated with him several others, among whom is a Dr. Stockdale, a former partner and associate of Dr. Copeland, of the Copeland Institute, this enables him to advertise to be in several places on the same date. I presume the majority of you are familiar with his name as there is hardly a county in the State that has not been burdened with his presence. If I am correctly informed this Dr. Rea was arrested at Boone some time ago and paid a fine of one hundred dollars. This gentleman of nomadic tendencies was recommended to the Board by our venerable and much respected friend and ex-president, Dr. G. F. Jenkins, of Keokuk.

Dr. Lyman P. Walter, a "magnetic physician and specialist," attracts our attention next. I find he is a gentleman that travels over the state advertising himself as a late arrival from the "hospitals of Edinburg, London and Berlin." He possesses the "greatest of all gifts, the power of diagnosing diseases." How I envy him. He, so he says in his advertisement, "can show a greater number of catarrh cases cured than any other physician living." Again I envy him. This gentleman of distinguished ability was granted a certificate on the recommendation of one Dr. H. V. Monnett, whom after a diligent search I located on the east side of the river,

Dr. W. L. Downing is another gentleman who claims superior ability in a professional way and devotes his time in traveling around the State. He was recommended by Dr. E. H. Reynolds, a member of the State Board.

I could continue reciting case after case similar to the above until your patience became exhausted. A few well established cases, however, is sufficient for the purpose in view, viz.: to direct attention to the methods of doing business by those high in authority. We ask ourselves of what value are our certificates? Has the establishing of the Board elevated or lowered the standard of the regular practitioner? There was a time when a distinction was made between the educated, deserving physician and the mountebank. Now when an accusation of quackery is made against one of these individuals he produces his certificate and says: "I am as well qualified as he. Don't I possess a certificate granted me by the Board which entitles me to practice?" What better authority do you wish? From this you can readily understand how the quack is elevated to the plane of the honest practitioner, while the honest practitioner is lowered to the level of the quack. In the eyes of the law there is no difference and the people are not slow in "catching on." There are many objectional features attending the indiscriminate and irregular method of granting certificates to individuals who are fortunate enough to get some recognized practitioner to sign his application. Not the least among these is the injustice inflicted upon the honest physician who sees his patients employ these individuals and drop into their coffers the dollars that rightfully belong to him. I have known patients to pay these

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mountebanks in advance for treatment while they were owing their family doctors for good, honest services long past due. The respectable and educated physician is under obligations to himself and family to correct this evil, to say nothing as the guardian of the health of his patients whom he is in duty bound to protect.

DISCUSSION.

DR. KENNEDY. *Mr. President:*—There is another feature in regard to granting certificates that is not brought out by the doctor's report; that is the application for certificates that are never granted. I wish I had time to show the doctor the applications that we have on file that were rejected and the recommendations that accompanied those applications. One of the most remarkable ones in the history of the Board was from Muscatine County. There was a gentleman there by the name of Richter, who applied for a certificate and it seemed as if every physician in the city tumbled together in their anxiety to sign his application. I don't think there was one physician residing in the City of Muscatine, including Dr. Ady, (who was usually very particular in regard to these matters,) but what signed his application recommending him as a man of good moral character and worthy of professional recognition. The application was so remarkable in its character that the Board was embarrassed by the force of the recommendation and instituted a series of inquiries and found that the gentleman was an inmate of the poor farm and was demented. Now, that is a fact within the records right in the office of the Board. I do think that every physician—I know that Dr. Cobb, Dr. Little, Dr. Ady and Dr. Dean were—and I think every physician in Muscatine, homœopaths, electropaths and all were on that application, and I could cite to you a great many more cases not quite so interesting, but where the Board did not grant these certificates, and I am glad that the doctor, in his paper, does not lay all the blame upon the State Board of Medical Examiners.

DR. C. H. PINNEY. *Mr. President:*—It has been a source of great relief to know that the Board has really refused to grant certain certificates. My observation and experience has been throughout the entire western slope of this State, that they have granted men certificates without limit and without stint. We have men in Council Bluffs that go about the streets with long hair coming down to about five inches below the shoulder blade, advertising themselves as the healers of man and readers of all diseases, etc. Now, such characters as that obtained their certificates from this State Board of Health, and when the physicians and the various societies of the western part of the State endeavored to bring action against them they are confronted with the fact that these men have certificates from the State Board of Health and for this reason we can do nothing and are compelled, whether we will or not, to allow these men to go on with their quackery. I have come to the conclusion long ago that any person, or every person that could get a friend that would recommend them as a friendly favor, might secure a certificate under such recommendation, whether jocularly, as no doubt this was. Probably this was done in derision of the Board. It looked so, at least to me, and they signed it with-

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out any reference to their own status or that of the man, supposing that the Board would understand that he was an incompetent man. Probably trying the Board to see what they might do in such case.

DR. J. M. BALL. *Mr. President:*—One thing that has been lost sight of in this discussion, is that this Board is not responsible under the law as it stands on the statute book. All this Board can do is to act under the present law, and it is a well known fact that the medical law in Iowa was somewhat compromised. The original grant, as very often referred to by Dr. Emmert and other gentlemen, was much more stringent than the law that we are now operating under. You should not blame the State Board of Health for that—for granting certificates to men whom they do not know, but who are highly recommended by men whom they do know. How easy it is for a traveling physician to come into Iowa and make himself acquainted with the physician in any city and pass himself off as intelligent, and in his conversation uses insinuating, nice words, showing that he is intelligent and has the requisite knowledge. How easy, I say, it is for him to ask of any member of this Society, "Doctor, I expect to locate here; wont you sign this certificate—this application blank for me? How many of you have been caught in that way. Now, let an application be referred to the State Board of Health and what can they do. There is a man's application backed up by a man they know, and the State Board, as I said before, is not responsible.

The paper of Dr. Pipino has opened up the whole question of a higher education. In the State of New York, I am happy to say, no young man can enter the profession of medicine—no young man can enter a college of medicine in New York City, who has not previously shown to the satisfaction of the board—a board not connected with any medical college—that he has a proper education, etc., to enter our profession. Now, when you get a law in Iowa similar to that, you will be striking at the root of the evil. Just as long as you have laws like our present ones, the colleges will admit to their doors and offer matriculation to men incompetent to enter the profession. The only way that we can reach the difficulty in Iowa medical education is to take only those matriculates who have sufficient education to be admitted into the profession. Suppose a college matriculates one who has insufficient knowledge in language, Latin, or scientific education, what does he do? He is labelled a doctor; he is brought into competition day after day with young men who have spent years in study and he cannot compete with them socially. He must compete with them in printer's ink. There is where you get charlatans, quacks, etc., and if you can have enacted in Iowa a law like that in New York, we will reach the right of this matter and we will have a better class of physicians and no complaint against the medical board of physicians.

DR. F. S. THOMAS. *Mr. President:*—I presume bodies of this kind, like individuals, may become "neurasthenic" and I would suggest the same remedy that I suggested in my paper and that would be rest. Now, it seems to me that there will be only one way out of this thing, and that is for this Society between now and the next legislature, to recommend a law, requiring every physician before commencing the practice of medicine

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in this state (no matter where he may have graduated, whether in Europe or from any college in this country) to first pass an examination. There should be but one test and that, the man's ability to pass the required examination. If a physician has the qualification without a diploma, he is a better physician than the man with two diplomas, without qualification.

DR. J. M. EMMERT: *Mr. President:*—I want to thank Dr. Pipino for this paper. I want to thank him on behalf of the Medical Society of Iowa. And if there are any jewels in our casket that have not been broken, I advise putting them away for safe keeping.

Now, I imagine from the applause with which Dr. Pipino's paper was received that many members of this Society did not know that some of the best members in our Society were recommending men whom they knew were not fit to practice medicine; whom they knew were ignorant, were immoral in every sense of the word. That was nothing new to the Board. I do not know when I was shocked more than I was when that question of Dr. Wray came up and that a friend, and that friend from Keokuk, had recommended him. Now, that fellow has probably given the Board as much trouble as any man in the State of Iowa, and we fortunately finally got that matter in such shape that we could squelch him. There were three Dr. Wrays. One of them had a certificate, that is, upon the ground of graduation, and the other two came in and practiced on that certificate. Which one Dr. Jenkins recommended, I do not know, but Dr. Jenkins—and I wish he was here—certainly knew, or ought to have known, that that man was a charlatan from the record that he brought here from Kentucky; and I want to tell you, if you will go over there, as Dr. Pipino did, and look over the records of that State board, you will find any amount of the best members of this Society that have recommended men that are the worst charlatans in the State. And, just as long as the members of this Society, and of the regular profession in Iowa, will guarantee the standing of these men in their community, and will recommend them to the Board for certificates, just that long you may expect to have this class of men among you. Now, I want to put myself upon record as standing upon the same ground as Dr. Thomas does, and believe that the only way to regulate the practice of medicine in any state is that of requiring an examination of every man that comes into the state to practice medicine; it makes no difference whether he ever graduated, or where he graduated. I believe that the Minnesota law, the Alabama law, the Pennsylvania law, the New York law, is right. Our law is simply a patch-work; it is a crazy patch-work. That is all there is to it. As the doctor said, it was a compromise. We tried to better it this past winter and failed, utterly failed, because there was too much politics back of it. I want to say that the State Board of Health has never been backed by this Association or by the profession in the State of Iowa. I have had a number of practitioners say to me last winter, before the Board met and before the legislature met, and when we did meet to draft a new bill or to strengthen our bill, that it was all nonsense; we had too much legislation. Just as long as we have respectable members in our profession that take that ground, as this

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doctor down here at Newton did a few years ago, we may expect this condition to remain. We have enemies in our own camp doing us a great deal more harm than those outside, and I am glad that this matter has been brought up, and I hope every member of this Society and outside of this Society in the profession will feel they are personally responsible for the standing of every member in the Society in the future.

DR. W. JEPSON. *Mr. President:*—I am glad to hear the expressions and to see the unanimity with which the Board is sustained as expressed by its members. But I would like to ask the Board, in other words the society, for enlightenment: Does mere recommendation of a man to the Board permit the Board to grant him a certificate to practice medicine in the State of Iowa? Does not the statutes of the State of Iowa require that a man shall possess a diploma from some reputable school of physicians, thus giving them arbitrary power to decide? Can they not thus then arbitrarily revoke a certificate? Do not the statutes give them the power arbitrarily to do this? I think if the profession would take the pains to look up the statutes they will see that is the privilege. Now, gentlemen, seeing the inadequacy, as expressed by them, would it not be well, if this Society had the interest of the profession at heart and dared to say to-day that we demand a higher education in the State of Iowa, and that every man that practices medicine in the State of Iowa should pass an examination before a competent board, no matter where he came from or what school he may have graduated from, and I think now is the time for us to express ourselves.

DR. J. M. BALL. *Mr. President:*—I think the gentleman who has just taken his seat was laboring under a mistake. He has taken it for granted that this Board has power to make law. This Board of Medical Examiners has no right under the statute to say that every man who desires to practice medicine in the commonwealth of Iowa shall pass an examination; that would require a complete change in the law.

DR. C. S. CHASE. *Mr. President:*—I wish to say a word in defense of the Board of Examiners. Those who represent the regular profession on that Board are among the best men in our profession. [Applause.] They, no doubt, as we all do this afternoon, wish that was our medical law, but I am here to testify in behalf of that Board that they have a fighting representative in our secretary. He came to our town, as he had been to others, in pursuit of this charlatan Wray. Of course he failed to mulct that man through that matter of mistaken identity—that that Dr. Wray was not the Dr. Wray who had been vouched for by Dr. Jenkins. I have talked with other members of this Society and I know that Dr. Kennedy is in hot pursuit of these damnable quacks that are running around over our fair State, if you will excuse the adjective I have just used. Now, I say that we are to blame for allowing this Board of Examiners to be misled by any reputable physician being found recommending them. Now, we may make a mistake. we may be imposed upon as, I have no doubt, Dr. Schooler and Dr. Jenkins and other gentlemen whom Dr. Pipino mentioned have been imposed upon. I can see a case where a doctor who had been recommended to the Board that at the time of recom-

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mendation might have been acceptable as a practitioner, and who might have back-slidden and fallen from grace after he had received the certificate. Certainly those who recommend a party and know, or have the means of knowing, all about him, should be censured for recommending such as are unworthy; but if the Board has the power to revoke certificates, or if they have the right to direct the secretary to follow them up and secure the proper evidence, we ought, in every town, be found backing them up, and see that every justice of the peace does his duty and make it so hot that they could not come into a town like ours, especially after this Dr. Wray had caused this miscarriage of justice. So, I say we owe it to ourselves, to the medical profession of Iowa to stand back of this board and make it stronger, as they want it stronger. Let us hang together on this law or, if we don't, we will all hang separately.

Dr. J. W. Kime. *Mr. President:*—I think if the members of this Society do their part, as Dr. Chase suggests, the board will not need backing up. If they find out that they are the class of men that Dr. Pipino has found them to be, they have the power to revoke their certificates, and if they don't do it they are the ones to be held responsible. We have visiting with us one of these Dr. Wrays and Stockdale. This Dr. Wray had demanded $500 to cure an eczema of the scrotum—$250 cash and $250 in a bankable note. That is the kind of business Dr. Wray is doing in our cities, and if that is the kind of cases, the Board of Health have the power to revoke their certificates, and they do not do it: it would seem that they lack the backbone, and it seems to me if they see these mistakes and do not exercise their power they are the parties we must look to.

Dr. Emmert. *Mr. President:*—I will make a pledge to the doctor, if he will send down to the State Board of Health the evidence of the incompetency of Dr. Stockdale, it won't be five hours until his certificate will be revoked. I want to say to the doctor there are only two causes for which the Board can revoke it: When a man has been a criminal and for incompetency. Now, the Board does not know whether a man is incompetent or not until it has the evidence before it to pass upon, and if the doctor will bring that evidence before the Board of Health of Iowa I will guarantee that his certificate will be promptly revoked.

Dr. R. A. Cushman. *Mr. President:*—I am not in the habit of speaking in public to any great extent, but I have taken a great deal of interest in the last few weeks in this matter of quack prosecution. I have been corresponding with Dr. Kennedy quite a little and have had personal interviews with members of the Board, and I wish to assure these gentlemen that more depends on the individual member than on the State Board. I have investigated the matter considerably—investigated the law—and I have a case on hand now, a Dr. Traer, and I am in hopes I will get his certificate revoked. I have the assurance of the State Board of Health that I shall succeed, and, since I have commenced proceedings, there have four quacks passed through the country and skipped my town. I think if every one here will watch these fellows and notify the State Board of Health we will be rid of those fellows in a few years.

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DR. KENNEDY. *Mr. President:*—I want to state the method Dr. Cushman resorted to to bring about this matter as far as he has gone. He, with some others, filed with the Board a charge, a formal charge, with specifications against this Dr. Traer. That gives the board an opportunity on the question of incompetency. As Dr. Emmert has just said, there are only two grounds on which a certificate can be revoked. One is palpable evidence of incompetency and the other is felony in connection with practice; conviction of a felony in connection with the practice. Now, the provision is not generally understood. It is generally understood as conviction by our Board, but felony can only be declared by a civil court. Those are the only two grounds.

Now, in regard to the case referred to of Dr. Stockdale—that is the doctor our friend and honored president, Dr. Schooler, recommended. I think I may be to blame somewhat for that. Dr. Stockdale came to my office in person with a diploma from the Kentucky School of Medicine, showing graduation, with an application made out in due form, except the recommendation. I said to him I cannot recognize that, unless you get some one to recommend you. The Board insists upon it and I must carry out the requirement. I do not know where to find any one, he said, I never was here before. He says are there any graduates of the Kentucky School in the city? I said: "Yes, Dr. Schooler is a graduate of the Kentucky School of Medicine," and, after a while, he came in with the doctor's name to the application and I issued the certificate. And I think all there was in the certificate. The other was Dr. Wray, who had a diploma from the Central Hospital College, Louisville, Kentucky. He came to Keokuk and settled and had his diploma with him and by some means, perhaps the means that Dr. Ball refers to, he succeeded in getting Dr. Jenkins to sign his recommendation. He was there only three or four days; was not there long enough to get his certificate. He went over to Ft. Madison and sent word for me to send his certificate there and he commenced itinerating at once, and I sent him his certificate.

I want to read an extract from the *State Register* of this morning.

DUNLAP, May 15.—Special: J. F. Walter is an itinerant cure-all doctor, traveling through western Iowa, who has been located in Dunlap about six weeks, doing a rushing business, healing the blind, the lame and the halt. Being a pronounced quack, evidently never having attended a regular school, the matter was laid before the State Board of Medical Examiners, and a complaint was filed against him charging him with practicing without a diploma. He skipped out yesterday, but was captured and brought back to Dunlap this afternoon. He was arraigned before Justice Jennings, pleaded guilty to the charge, and was fined fifty dollars and costs, in default of which he was sent to jail at Logan.

So the Board is not lying idle wherever they can get evidence. We cannot go to these places and file complaints against them, but as soon as I hear of any person practicing in any place without a certificate, as soon as I can, the machinery is set to work to revoke that certificate.

DR. J. W. SMITH. *Mr. President:*—I did not really intend to say anything on this subject. There has been a good deal of it done, but I

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have felt for years, and more especially within the past year, that it was a burning shame the way things were conducted in our town and many other places in the State. I think about two years ago I spent some time in this city looking up this subject. Perhaps I would be justified in giving some of the discoveries I made. One was that our honored commission of pharmacy has more right to license and send men over the State of Iowa than the medical board has. They have in the pharmacy law a section that they take from the Illinois Medical Practice Act, where it says that any individual coming before them and presenting a $100 bond they shall give him a permit to go over the State to practice. There was one gentleman of this class came into our town some years since remaining six or seven weeks. He kept several columns going in the press—subsidized the press—but that is not the finest part of it. He got four physicians and four ministers to endorse him. Now when physicians and clergymen do that kind of business it is a pretty bad state of things. I don't want to lay too much to the State Board of Health, I think we ought to take it right home to ourselves, and when we realize that we have a very imperfect law and the Board of Examiners have very little power, I think we should go home and consider this matter and be very careful about recommending such men, and I would have the Board of Examiners be very careful about granting certificates to such men, we will have a less number of these kind of men perambulating over the State.

Dr. L. Schooler. Dr. Pipino's happiness would not be complete, perhaps, without he roasted all of us on this question. I want to ask Dr. Kennedy, however, in view of what has been said before, if the granting of certificates is not simply the judicial act of the Board and not the law; the method in which they are granted, a rule of the Board, intended to be in compliance with the law?

Dr. L. Kennedy: It is.

Dr. Schooler: There are many ways in which these irregulars can practice in Iowa, as well as some other states. The mere matter of their advertising does not, perhaps, bring them within the pale of the law in any state. It has been decided in the Missouri courts, and some other courts, that that was not sufficient to empower a board to revoke a certificate. Since the graduation of our last class, which occurred about the 5th of April, there have been two men of that class in my office inquiring for medical students, who are presumably hard up financially, but who had a diploma; but, on questioning them, I found their idea was to hire the students for a certain sum per month, in order that they might register and thus they could practice under their diploma. One of them represented that he was a representative of a Chicago medical institute and wanted to hire some medical student from some county, then they could go from town to town and practice by virtue of that registration. Now, anyone that is familiar with the way that students register and procure certificates, can see how, in some instances, in prospect of financial reward, they may be induced to allow themselves to be used in this way. When a student graduates he immediately wants to register with the Board and secure a certificate, and the faculty and some-

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times other friends recommend him to the secretary of the Board and the college having good standing and recommending the secretary to issue a certificate and the secretary has no objection on his own account, and he is recommended by men whom he knows are in good standing. The student has not had time to demonstrate whether his practice is reputable or not. This is one of the methods by which men procure the means of practicing under the laws of the State. Another is by securing the recommendation of a gentleman known to the State Board of Health, and a certificate is issued in that way.

Now, in regard to this man Stockdale, he came to me as Dr. Kennedy has explained, and he showed me letters from Dr. Kelly and others in Louisville, whom I knew to be good men. He was a medical student and was recommended as we recommend our students, just as the Iowa Medical College recommends theirs and the Keokuk College recommends theirs. Dr. Kelly recommended him because he had been worthy during his student days and I knew Dr. Kelly, and therefore I signed the application and the certificate was issued on that. A few weeks after that I had a further experience. I understood that Stockdale had hired out to a man by the name of Copeland, from Chicago, and opened an office just below me—was a close neighbor. Another man came in, he said he was Dr. Perkins, of Chicago. He had a letter from J. R. Hurlbut, one of our wholesale drug men here in the city, asking me to recommend him to the State Board of Health for a certificate. I told him that I had been caught once; that I had recommended Stockdale and he had gone into a disreputable practice, after telling me he was going to do a reputable business, etc., and I was going to be a little more particular—I was going to reform —but if he would go over to the county clerk and bring me an affidavit that I would. He said he would, but the way he said it, I didn't think he was in earnest. A few days afterwards I met Mr. Hurlbut, when he said "my recommendation is not good with you?" I told him "no, not in some things. When it comes to recommending a man for a certificate to practice medicine I want to be very sure who I am recommending." He said it did not make any difference anyway; it was all right; but he said the man registered without any recommendation. He said he went over to the capitol; that his father or uncle was railroad commissioner and that he went to him and told him how it was, and he said that he had some political influence with the Board and he went up and saw the secretary and obtained a certificate. [Applause.] Now, I am not vouching for the truth of that story. I just relate it as it was related to me.

Dr. Kennedy: I will look that up, Doctor, and bring over his application to-morrow.

Dr. Schooler: They took pains that I should hear that kind of a story. Of course Dr. Kennedy is here. I would not tell it in the doctor's absence. But then it is a very easy matter for a man who pretends to be reputable to obtain a certificate under the rules of the Board; there is no question about that. The only fault I have to find with the rules of the Board in that respect is that they do not allow us any drawback, so that, when we find that we have made a mistake, they do not allow us to play the

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baby-act enough to withdraw our recommendation; but whether they can do that under the law, I do not know. It seems to me a man ought to be able to withdraw his recommendation of a man doing disreputable business. There are many things, for instance on a bond of a man to keep the peace, or on a bond for bail to keep him out of jail until he is tried on a charge for which he is indicted, and you become convinced that he is likely to leave, or for any other reason you desire to be relieved from that bond, you can go before the proper officer and be relieved; but that is not the rule of the Board. Perhaps it is not practicable. I have no charges to bring against the State Board and I have no baby-act to play for the recommendation of Dr. Stockdale. I did as much as if he had come before me with a letter from Dr. Kennedy with him, or I would have done if he had brought a letter from one of you recommending him as entitled to confidence, and I signed his application as I would if recommended by one of you. But there are several other influences by which they can carry on this kind of business without registering themselves, and I do not see very well, under the present law, how you are going to get around it. This State is quite cosmopolitan in this respect.

DR. W. F. GRAHAM. *Mr. President:*—I know this is an evil, but it seems to me that just because a few real smart, shrewd scamps are traveling over the country and making more money than any of the rest of us, that this Society is holding up its hands in holy horror, when right by the side of each and almost every practitioner is a little fellow almost as bad as they and why not, also, have the State Board of Health revoked their certificates. I would like to ask the secretary of the State Board of Health how many certificates they have revoked in any given time for incompetency. I doubt if there is one a year, and yet I doubt if there is a physician within the hearing of my voice but what knows of persons holding certificates that are incompetent. I know my friend, Dr. Emmert, right beside me, is a member of the Board, and I believe that he knows more than one, and I believe, as I heard a member of the Board say since I have come to town, that he knew of a number of other persons that were incompetent. But the idea I wish to impress is that there is a lot of fellows all over the country doing the profession and the people more harm than those men going around over the country, and I believe the Board of Health can get at them easier than they can get at those other fellows.

DR. KENNEDY: The gentleman who has just taken his seat asks me a question. I am not able to answer that question definitely, but I would like to know how many of these little fellows he has filed a complaint against before the Board and sought to have their certificate revoked?

DR. GRAHAM: I don't know of any that some member of the Board don't know.

DR. C. F. WAHRER. *Mr. President:*—I yielded the floor to the secretary of the Board and in doing so allowed him to make my speech. We have been making charges and countercharges here; we have been blaming one another. Charges have been made which, if true, I believe are

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indubitable evidence against members of this Society. I believe that we are causing more amusement and doing more good to gentlemen of the press present than to ourselves by this discussion. There is a widely diffused spirit among the profession of Iowa—not among the State Medical Society that I know of so much as among the practitioners throughout the profession that do not come to the Society—that everything is not done that could be done. They are kicking and kicking hard. Each one says I know of a man practicing without a diploma, or without a certificate, or some other wicked way. It seems to me that the weak wheel in the machinery is in this: no person whose duty it is to file complaint fails to perform that duty, insisting that it is the duty of the State Board to do that. There are three men practicing medicine in Keokuk that have no right to do so, without the shadow of a doubt. One of them is this Dr. Wray, who will be at Keokuk to-day and to-morrow. Instead of finding fault with other people I will complain against myself; that, living in Keokuk, why don't I file complaint against these men? It is for the same reason that when I see a man walking over the grass where he is prohibited from walking, I do not rush before the judge of the superior court to file an information against him; for the same reason that when I see two men fighting I do not rush before the justice of the peace and file complaint against one or the other for assault and battery. In the first place it is no special business of mine, and if not in this case, it is not my special business in the other and, in my practice, it is notice to the people, and they look at it in that way in spite of all you can do, that you are afraid of them. I am not afraid of them. They do not hurt us financially; they do hurt us as a matter of dignity and hurt the profession generally; and yet, if one member of the Society files complaint against one of these people, you know and I know that the citizens of that neighborhood will say that Dr. Jones or Dr. Smith filed complaint against this doctor because he was hurting his practice. It will be misconstrued. Of course it will not be true, but this misconstruction will be made. For this reason you do not file complaint; you do not take such steps as should be taken with reference to these people, and for this reason the attention of the court is not called to this matter. Until very recently the State Board of Health had no way of knowing that they were practicing, because nobody told them so. The State Board cannot run all over the State hunting them. I think the State Board of Health should have an attorney on a salary in constant employment to see that the medical law is thoroughly lived up to. It seems to me if we will do this we will have better enforcement than we have ever had. It seems to me, as this discussion is continuing, as a matter of dignity, as a matter of selfish policy, it is about time that we ceased washing our dirty linen here before the world and, especially, cease making personal charges by name, whether upon matters of fact or matters of error.

Dr. R. E. Conniff: I would ask if Dr. Wahrer would want the Board to act as prosecutor and judge in a case?

Dr. C. S. Chase. *Mr. President:*—To answer Dr. Wahrer, I want to say this, that in the case of the quack, Dr. Wray, that Dr. Crouse, Dr.

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Small, Secretary of the Cedar Valley Society, and myself, Secretary of the State Medical Society, are united, and I am willing to file information personally unofficially, and, perhaps, to begin the business when I get home, to see what we can do and try our level best to bring that fellow to taw. Now, Dr. Kennedy knew the trouble of proving the identity of this man. Our county attorney was squarely at our back and did the best he could to get the matter through, and our daily paper came out in a column article, because it had been paid for it, in an insinuating way remarked that this action had cost the county some $15,000. I had the effrontery to answer that paper in its own columns and ask it whether or no it preferred to support these traveling mountebanks as against their own honorable, upright and taxpaying people. I say we ought to stand by our Medical Examiners, every one of us, and we can rid Iowa, in sixty days, of every last one of these fellows if we will do it.

DR. J. C. SCHRADER. *Mr. President:*—It is a well known fact that the medical practice act is not such as the physicians of this State desire. It was a compromise measure. It was considered better than nothing; that it would do to start the wheels moving. That law provided for the regis- ration of three classes of physicians. First, those holding diplomas from accredited medical schools; second, those who had been practicing for eight years, three of which should have been in one locality; third, those that came before the Board and underwent an examination and passed that examination satisfactory to the Board. Now, this five years clause was a very peculiar one and the Board had no option in the matter. If a man came up here and produced satisfactory evidence to the Board that he had practiced five years, three of which was in one locality, the law says we shall give him a certificate. It does not say we can examine into his competency; nothing of the kind. There is where a great many of these fellows crawled in, when we could not help it. Then it says afterwards we may revoke their certificate if palpably incompetent or for conviction for a felony; that is all. Now we were pretty well satisfied that some of these fellows were not the kind of men that should go out and practice among the people of Iowa, but what could we do? There the law was mandatory in this matter and nothing was left to be done but to issue certificates to these men; they could come up and demand them and did do it. Last winter, after we had had this law and had been practicing under it for several years, we had the Attorney General employed on that so that it might be legal and took a good deal of pains to get that before the legislature, correcting many of the faults that we considered were in the former law, but it finally failed to pass. If we had got that law to pass, or an amendment to the old law, we would have had a chance then to get after these fellows. But we could not impress it strongly enough upon the minds of our legislators to help us out in those matters. We cannot revoke a certificate unless there is evidence brought before us; there must be evidence. We cannot act as prosecutors, judge and jurors any more than a judge can sentence a man to the penitentiary even though he knows he is guilty of murder. But you bring the evidence before us and we will act thereon and I do not think there will very many escape. We are ready to

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do that, and do it thoroughly and emphatically, and when the legislature meets again we will be going to them and asking them to give us a law that will perform this matter. If you will all assist us in this matter it will not be more than two years before we can act promptly and efficiently in these cases.

DR. PIPINO. *Mr. President and Gentlemen of the Society:*—From the remarks that were made during the discussion I want it distinctly understood that I have no fault to find with the State Board of Health. Indeed, I would not have the present law repealed, if we could not get another one, for anything in the world. I believe the present law is simply preliminary to something better and higher to come. I believe that if we have a new bill drafted to regulate the practice of medicine and surgery in the State of Iowa and that if every member of the profession in the State of Iowa will consider himself a guardian to protect that law, I think we need have little fear but what the secretaries or the State Board of Medical Examiners will do their duty. Therefore, Mr. President, I would like to make a motion that this Society appoint a committee of five, to be appointed by the president, to draft a new law governing the practice of medicine and surgery in the State of Iowa. (Motion carried and committee appointed.)

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SECTION OF THERAPEUTICS.

BASIC ERRORS IN THERAPEUTICS.

BY G. WALTER BARR, M. D., KEOKUK, IOWA,

Empirical medicine has to-day been relegated to the company of charms, exorcisms, treatment of symptoms and the other interesting events of the history of medicine, so thoroughly that a body like this would consider itself insulted by an argument for rational therapeutics. That therapy is based upon the physiological action of remedies acting upon a pathology to restore it to a histology is accepted to-day by everyone and requires no paper to discuss it *pro* or *con*. Yet there are individual cases in which there is apparently no application of this principle; these are the result of present ignorance of pathology or of physiological action and are growing fewer rapidly as intelligent observation sheds new light upon these subjects. In every branch of study there are errors which are most common; a study of those things most often lost sight of in practical therapeutics and which consequently cast the most shade upon our branch of the profession may not be amiss, simply to call the attention of this Society to what they already know but perhaps sometimes overlook.

The generalizations growing out of this study of observations in materia medica apply, most of them, equally well to the study of pathology, but the specializations necessary there I will leave to our friends of the microscope and microbes.

There are two ways of ascertaining the physiological action of substances: by experiments upon man; and upon animals. One common error is in assuming that the dynamic effect of a drug will be the same upon man as it has been proven to be upon dogs, rabbits and guinea pigs. While this is generally true, it is not a universal law. When the therapeutical effect upon a patient is not that to be expected from the announced physiological action, it does not follow that the grand principle underlying all modern medicine is at fault—it simply proves that somebody blundered in making the announcement, and that in man the dynamic effect is not what some self-constituted teacher and careless experimenter said it was.

It seems easy to see, hear, smell and feel correctly, especially when the attention is upon the subject. Yet every lawyer, every reporter, every detective knows that in his heart he has little faith in the observations of very honest men when they are contradicted by circumstances. Most judges give greater weight to circumstantial than to direct evidence. When haste becomes a factor, what little respect is due to any of the human senses, vanishes. All of this applies to the observation of facts

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and events in the study of physiological action equally as well as to the occurrences upon a battlefield or the details of a game of ball; and to this incorrectness of perception is due some small part of the disagreements and errors in the materia medica as taught to-day in school and journal and book.

One of the errors most easily detected, but also most often observed in published reports of experiments in detail, is the lack of differentiation between an observation and an inference. *Prima facie*, it seems impossible to occur, but unconscious cerebration is not uncommon, and if any of you will watch the conversation of your fellows, you will find this error creeping into nearly every argument and statement of fact. For centuries a blue-white skin, of particular characteristics, was seen only in cases of heart failure from some cause. Some new forces came into existence by the introduction of coal-tar products into medicine, which also produced this peculiar skin phenomenon; many men reported cases of heart failure which were simply (or complexly rather) manifestations of oxy-hæmoglobin changed into methæmoglobin, even while the heart was beating with more strength than usual. I have surprised several doctors with cases like this by asking them to feel the pulse. They thought they had observed a cardiac change, but really had reasoned from old and previous observations to a logical conclusion—which was incorrect because one of the premises was untrue. If a drug contracts the arterioles of the frog's foot or of the human skin, the general statement is often made that it contracts the arterioles; one drug contracts the arterioles except those of the kidney which it dilates—the converse as regards the kidney was an inference long taught as an observed fact, which latter it was not. The quantity of this kind of heresy floating through the best of medical literature will surprise anyone who will seek it out for the first time thoroughly.

More therapeutic nonsense, based upon pseudo-scientific fact, is due to the ignoring of important condition than to any other cause. Logically, scientifically and eternally each change in conditions produces a commensurate change in the effect. Among the more important conditions of dynamic action of substances upon the body are the quantity of substance acting, which may be called the dosage, the modifying influence of other active substances brought into the problem coincidently and in constant ratio, and changes in the body acted upon occurring during the experiment.

It is so well understood and universally accepted that one dose of a drug produces effects quite different from a dose twice as large, that one would think the fact would never be forgotten. Yet in the case of cocaine hundreds of pages of fine print were written reporting observations and experiments upon the physiological action of the drug, and scarcely any two experimenters announced the same facts as to its action upon the nervous system. As my position compelled me to teach something about the drug, and my habits compelled me to make every effort to teach the exact truth, I undertook the problem of ascertaining who was right. I found they all were correct—for every discrepancy in the propositions advanced had by its side a corresponding variation of dose administered by the warring experimenters. If they had stopped fighting long enough to remem-

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ber the principle familiar to their fathers, they would have seen that each had worked well a different field and that the work of each harmonized perfectly with that of the others proving anew that over stimulation is depression and several similar truths.

The medical men in our specialty quarreled for some time about the physiological action of jaborandi; one experimenter, usually correct, announcing observations diametrically opposed to those discovered by another equally reliable. Some text-books taught one thing, and others taught something exactly opposite. Some experimented under one condition and the others under another—in the specimen of the drug used by one, much pilocarpine and little jaborine was present; the converse obtained in the specimen used by the other. Both ignored the fact that jaborandi contained these two alkaloids nearly antagonistic in action—and ignorance of the modifying conditions generated error.

The subjects of tolerance and the fact that aside from this a drug long continued may later produce different effects from those in the beginning of the experiments need only be mentioned as causes inherent in the body producing variation of action. They, too, are frequently overlooked.

All these things probably seem trite, commonplace and unnecessary to relate, no doubt. But I firmly believe that more harm is being done to the dignity of medicine as a science, and to the lives of those who trust that most sacred possession to our care by the neglect of these truths in actual practice that by any other cause. While there is a stupendous lack of reason shown in diagnosis, sometimes, there is an equal amount of illogical methods in modern therapy—considering the profession as a whole and excluding neither the recognized expert nor the illiterate doctor who reads no journals and knows no more than when he began practice twenty years ago. It is more pleasant to speak of our advancement than of our fallacies, but it is certainly profitable at this time to consider these fallacies which have already become apparent to the laity. I am nearly ready to take the position that logic should be a part of the course of medical colleges; and I am very sure that mathematics is more valuable than Latin in the preliminary education of a student. We must either give up the doctrine of rational medicine, or else be rational and philosophical in the use of remedies. If we are thoroughly logical we prove that medicine is as certain and as exact a science as astronomy; if the astronomers were as careless in their mathematics as we are in our logic, astronomy would soon be astrology again.

The avalanche of new remedies which has come down upon our unprotected heads lately has given the finest of opportunities for brilliant but false research. Somebody announces that he has had seven cures of pneumonia by administering sulphophenacetibenzole, and within a week the journals are full of items to the effect that this new drug has given good results in pneumonia; within a month the "advanced" physicians are giving it to pneumonia patients all over the country and these patients are getting well in about nine days or dying; though we seldom hear of the deaths. Or, somebody reports three experiments upon rabbits which the summary at the end of the article says prove conclusively that carvalvine causes a leaking mitral valve to grow enough to fill the space allotted to it,

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and soon we are all using carvalvine for mitral regurgitation—or at least saying that we do, for fear of being thought unprogressive. No one wades through the report of the experiments itself, because it occupies ten pages of dry details, and hence no one discovers about twenty errors in the premises and forty in the logic upon which the conclusions of the summary were based. Materia medica has made wonderful strides forward in the past decade, but has also in the same time made asinine errors enough for a century. We have always with us those who being unable or unwilling to think deeply are constantly decrying everything but empirical medicine. There is great danger just now that the profession will furnish them ammunition enough to win their victory of retrogression, ignorance, dogmatic teaching and the reduction of medicine to a trade.

The basis of therapeutics is rational investigation of pathology and the action of remedies. We have enough remedies and nearly enough pathology to exercise our reasoning faculties for some time. The profession to-day is certainly devoting most of its energies to the discovery of new pathological and pharmaceutical facts, and *not enough care to being correct in its physiological study and therapeutical applications.* The proof of this allegation is found in the text-books, the journals, the society discussions and the conversations occurring when doctors meet. Anyone with eyes and ears open may in twenty-four hours casually meet enough careless logic to cause the expulsion of any pupil in the public schools who would make the same errors in his own studies. This has nothing to do with radicalism or conservatism; radical may be the exactly correct, and the conservative may be the illogical. I do not see that it has much to do with age; the younger members of the profession are perhaps the greatest sinners, but many an elder man runs after new goods until the new love drives out remembrance of the old, faithful and safe friend.

I have risked much adverse criticism in presenting this paper because I think the subject more important than a new treatment for malaria or a dissertation on a new member of the phenyl group.

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ANÆMIA OF CHILDREN.

BY CALEB BROWN, M.D., SAC CITY, IOWA.

I feel almost like offering an apology to you, as members of this Society, for bringing to your notice so common a subject as the title of this paper suggests. The subject of anæmia is one with which we all feel more or less familiar, for patients with a depraved blood state are found on every hand, this condition existing, either as the principal blood change or as an accompaniment to other morbid processes. So often do we meet it, both in practice and in medical literature, that it would seem nothing new could be brought to your attention.

I was first led to think particularly on this subject during the early years of my practice by finding that in cases among children in which the principal symptoms seemed to be manifested by the nervous, respiratory or digestive systems. I soon found that by directing my treatment to the symptoms as manifested by any one of these sets of organs was unsuccessful, but by looking well to the blood condition by appropriate blood tonics, at the same time giving attention to the digestive or nervous systems as required, that my cases recovered much more rapidly. No doubt some of you have wondered, as I have done, that so little is to be found in our books on this condition, as it occurs in children with its long train of nerve disturbances and almost endless series of morbid processes which so closely simulate other and more serious diseases. The real meaning of the word anæmia is a diminution of the whole volume of the blood; it is the opposite condition to that of plethora, but the meaning we ordinarily give to it in medicine is a change in the blood conditions, particularly the red corpuscles, without regard to volume.

There are three conditions which are classed under the general term anæmia, viz.: Simple anæmia, pernicious anæmia and chlorosis. The distinguishing marks, as regards the blood cells, between these various forms, briefly stated are these: in simple anæmia the principal change is that of a decrease in the number of red corpuscles; in chlorosis the hæmoglobin is reduced in a greater degree than the red corpuscle, being sometimes reduced to seventy per cent. or even sixty per cent. of the normal, while the hæmoglobin may be reduced to forty per cent. or even thirty per cent. of the normal, while in pernicious anæmia the decrease in the number of red corpuscles is greater than that of the hæmoglobin.

Although a case of pernicious anæmia in a child five years of age has been recorded by Kjellberg in *Nordiskt Medicinskt Arkiv*, yet it is extremely rare in children, so that the condition which interests us at this time is simple anæmia. We will not take time to discuss the subject of blood formation and the development of the red corpuscles. Suffice it to say that the condition under consideration deals more particularly with the red

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corpuscles, and whatever may be their origin or process of formation, there is no doubt that nutritious diet, refreshing sleep, good air and sanitary surroundings are necessary to keep up a healthy blood condition. It has been estimated by Bouchard that there are formed throughout the intestines of an adult in twenty-four hours a quantity of poisonous alkaloids, which, if excretion were stopped and all were absorbed, would be sufficient to destroy life. There is no doubt that by putrefaction processes and retrograde metamorphosis in the system sufficient poisonous alkaloids, ptomaines and leucomaines are formed to seriously impair the health, should these be retained in the system by a lowered vital force, deficient excretion or a retention of fecal matter in the bowel and thereby a re-absorption through the mucous membrane. This is believed by Sir Andrew Clark, writing in the *London Lancet*, to be one of the leading causes of anæmia in the adult and I believe it is even more so in the child, as we almost always find, in our anæmic cases among children, deranged digestive organs in which fermentation is taking place, feces retained and constipation, alternating with diarrhœa, exists. Certain it is that unsanitary surroundings, imperfect nutrition and attacks of acute diseases are among the most potent factors causing the condition under consideration; these only acting with more force when aided by retained excretions.

The system of the child is more sensitive to climatic changes, errors of diet and unhygienic surroundings than that of the adult, hence we find the children more often suffering from these causes, their vital forces soon giving way before these various foes until we have a vitiated blood stream, an unsteady nervous system, poor digestion, deficient assimilation and an imperfect working of the excretory organs which so soon throws the whole machine so out of gear that it is hard to tell which wheel or set of wheels first began to run out of harmony. It is because of this sensitiveness of the child that we so often find them anæmic, not usually, however, without some of the other accompanying pathological conditions. We all know that diseases occurring in childhood are greatly modified by the age of the patient; we find many symptoms not present in the adult and symptoms that are prominently marked in the adult may be wanting in the child, and in no condition is this more certain than in anæmia. And as we must arrive at our diagnosis in case of children's diseases in great part by objective rather than subjective symptoms, we must be ever on the alert to detect those obscure signs which any but a practiced eye and correct judgment would overlook. When the blood, in a child, becomes impoverished by the number of red globules being decreased, as we have it in simple anæmia, it seems to react on the nervous system with more force than in the case of an adult; the system loses its tone more quickly—we then have a long train of nerve disturbances such as restlessness, peevishness, uneasy sleep, spasmodic twitchings or even well developed convulsions from very slight causes, all because the nerve centers are supplied with a poor quality of blood. We must not mistake this condition for a primary nervous trouble and treat it by anti-spasmodics alone without at the same time striving to improve the blood state and tone up the whole system; if we do we will most likely fail or at least our patient will improve but slowly.

There are cases in which anæmia seems to be the only or most marked

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pathological condition, but in which the symptoms so closely simulate other diseases that it is easy to arrive at wrong conclusions; one of these is tuberculosis—occurring in children in this disease, as well as in anæmia, we have cough, signs of failing health, such as loss of appetite, flabbiness of the soft parts, emaciation and loss of strength, pallid features, skin dry and rough; we also have in both diseases anasarca. You may say that we should make no such mistake, for we should be able to discover tuberculosis by physical signs, but we must remember that physical signs are wanting or hard to get in many cases of tuberculosis in children. Smith says that in incipient tuberculosis in children physical signs are wanting and that only in one case in eighteen of tuberculosis in children are tubercles found in the lungs. In short, anæmia of children, and I mean by this when anæmia is the principal pathological factor without other well marked pathological lesions, may be mistaken for almost any disease that lowers the vital forces, impoverishes the blood or weakens nerve energy. On the other hand we must remember that any of these morbid processes will, if continued, produce anæmia and the one react on the other until it is hard to determine which was the first to go wrong.

The symptoms of anæmia in children are irritable temper, want of life and vivacity, an appearance of fatigue, especially after eating and during the process of digestion, mental energy is diminished, the child is in a fitful, restless state in which it is never satisfied, crying to be held by first one and then another of the family, and perhaps crying a good share of the time, day and night. When we are called to see a case of this kind the mother will declare that the child is suffering severe pain in some part of its body and from some obscure cause, and the physician may be misled into prescribing an anodyne to relieve imaginary pain when he should give an occasional dose of some anti-spasmodic to quiet nervous excitement and then give appropriate treatment for the anæmic state which exists.

The powers of the circulation are lessened and there is a diminution of functional energy of different organs; the heart action is feeble, pulse small, weak and compressible and is easily disturbed, becoming rapid from slight causes and is frequently irregular, extremities are cold, surface is pallid, more apparent in the face, and more particularly in the prolabia; mucous membranes are pale. In patients who have an unusual vascularity of the face anæmia may exist, not only without notable pallor but even with a rosy complexion, and sometimes pallor is noticeable only in the morning or after fatigue, disappearing under excitement. In protracted cases there is a shrunken condition of the gums, the skin has lost its elasticity, the cellular tissue is edematous, especially under the eyes and around the ankles; sometimes distinct febrile paroxysms occur, the urine is of low specific gravity from deficient elimination of urea and is often more clear than normal from lack of pigment. We may also have a dry cough and shortness of breath and great fatigue. The peristaltic action of the bowels is diminished from weakness of muscular fibers as well as from lessened secretions of the liver.

In reviewing the causes, symptoms and pathology of anæmia treatment suggests itself. We must endeavor to correct any accompanying disease; if it is impaired digestion we will use mild bitter tonics with some

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of the well known pepsin preparations and see that the bowels are kept regular and fermentation prevented, so far as possible. If the nervous system is weakened and showing undue nervous excitement we must control it with potassium bromide or other anti-spasmodics until it has regained its tone. Any treatment which has a general tonic effect will have a tendency to improve the condition of the blood, but we will cure our patient more rapidly by using some preparation of iron, as this seems to be the specific for anæmia; the form selected will depend on the individual case; the tincture of the chloride has seemed to me to be the most effective where the stomach will bear it. Syrup of the hypophosphites is also an effective remedy. Cod liver oil is also a great help where it is well borne and the child can be induced to take it.

Anyone who will follow this simple plan of treatment in those cases of debility and anæmia in children where the little patient seems to be gradually losing its hold on life, seemingly threatened by death from some serious affection of the respiratory or digestive organs will be agreeably surprised to see how rapidly the child will recuperate, its cheeks be flushed with the rosy hue of health and it will again take interest in life by amusing itself with playthings instead of wearing its attendants out by continuous fretting and the physician will laugh at himself for ever thinking the child was in danger of dying from some serious disease.

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CARCINOMA.

BY D. L. COLE, M. D., BUSSEY, IOWA.

Carcinoma may be regarded as a specific atypical neoplasm, of obligate parasitic origin; having a special predilection for an environment of epithelial tissue, which may be either undifferentiated embryonic epithelium or differentiated epithelium of low vitality. We may not be justified, at the present, in making a diagnosis of the parasitic origin of cancer, but when degenerations of all kinds (hyaline, colloid, gelatinous, horny, etc.), vacuolation and dropsy of cell bodies, irregularities in the distribution of the chromatine, dispersions of chromosomes and fragments of such during and after the karyokinetic process; inter-cellular invasion of red corpuscles and leucocytes, either normal or variously degenerated, have failed to account for the pathological phenomena manifest. We are then justifiable in regarding it as of parasitic origin, especially, when its morphological attributes and its reaction toward stains are such as to preclude all possibility of being explained by any of the numerous kinds of cell metamorphosis or other irregularities of cell life alluded to above; and when in addition to these a sufficiently well marked and well established developmental cycle can be demonstrated.

But little definite proof can at present be adduced to substantiate our position regarding the parasitic origin of cancer. It has as yet not been made to conform to the requirements of Koch's postulates, and possibly may *never* be, as the very fact of its obligate parasitic nature renders it sterile on artificial culture media. But within the last few months investigations have appeared (Korotneff's) describing a new parasite termed "rhopalocephalus carcinomatosis" with all its stages of development which is regarded specific in cancer. Concerning the etiology of cancer, my own views are, that: if the person approximates perfect health, cancer will not develop. In other words, I believe that cancer will occur only under certain conditions, consisting of depressed vitality or an atrophic state of the tissues primarily involved. This condition manifests itself in the age of decline and in tissues or organs that have passed their functional period, such as the generative organs or mammary glands.

The generative organs of the female at the menopause, having previously been the seat of catarrhal or other forms of disease, are likely to be found in a half dead and a half alive state, constituting what we consider a proper nidus for the reception of the infection of cancer.

The same may be said of the breast. Mammary cancers are very rare in young women or during the active stage of the gland, it is more likely to show itself when the breasts are quiescent and when the tissues are more or less atrophied. Nor does it attack the lip of a young and vigorous man but rather that of an old man that has a fissure or an abrasion of the

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epithelium, and in which the tissues are depressed. The same remarks may apply to cancer of the stomach, intestines or elsewhere. One affected with gastric cancer will nearly always give a history of preceding indigestion indicating catarrhal trouble or irritation that has led to an atrophic state. It may be asked by some: If cancer is a germ disease, how does it attack tissues which have no connection with the outer world? We do not think it does. I am very doubtful, for instance, whether cancer ever appears in the brain as a primary disease. We can nearly always trace its origin to cancer of some other location having connection with the mucous membrane or integument as the uterus, ovaries or prostate gland, and if such primary lesions are not discovered it is no proof that they do not exist. An argument in favor of the germ theory is that disease must be regarded as health plus an injury; and an injury must originate chemically, mechanically or specifically. All mechanical and chemical injuries are of necessity self-limited, because such injuries do not possess the power of increasing their irritating properties. If a local injury, either of mechanical or chemical origin, be slight "as it is in primary cancer," the disturbance is rapidly equilibrated and the body returns to its normal condition; but if it originates from a specific germ, capable of perpetual propagation, then we have a constantly increasing irritation developing in *this* case a typical cancerous structure, consisting of an army of phagocytes marshalled by the host and entrenched in the stroma of connective tissue, arrayed in deadly combat against the ever increasing enemy. When the host has spent its forces combating this infection, a crisis in the pathogenic development has arrived, when the patient is in imminent danger, due to a rapid multiplication of the specific virus which develops inflammation of the local parts, by which means a position of this virus is more readily transposed to other parts of the system. But while it is true that germs are carried to other parts a more productive source of disaster to the host is the advent of a new germ, a saprophyte (the streptococcus pyogenes) which lives upon the dead or dying tissues of the diseased parts, developing an ulcerative condition, the products of which are carried to all parts of the system producing septicæmia and pyæmia that are so disastrous, especially to a debilitated being. And we might say here, that while we are accustomed to regard syphilis, tuberculosis, and cancer, as excessively destructive diseases *per se* a moment's consideration will suffice to eliminate from our minds this traditional notion. Syphilis frequently runs its first and second stages without recognition, and does not interfere with procreation. Tuberculosis of the lymph glands, bones and even in the peritoneum is not very fatal.

Cancer may linger in the host for some time without exerting any material detrimental influence, and even the specific virus may be eliminated as sometimes occurs in scirrhus of the breast. It is only after pyogenic infection of the pathological tissues that sepsis and symptoms called hectic appear. This sepsis must be then the disturbing factor. It is proven from an evolutionary standpoint that it is inconsistent with the conservation of nature and the fulfillment of the first and second laws of life, namely, self-preservation, and perpetuation of the species, to conceive of an obligate parasite which we believe the germ of cancer to be, exerting

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such marked virulency upon its host as to preclude the fulfillment of these laws, and these remarks apply as well to the pyogenic microbe. It is obvious that a comprehension of these limitations of obligate bacteria would not only direct future biological researches, but materially assist in suggesting therapeutic measures. They also furnish a perspective in which a limited data may be studied by the side of more complete facts; and they offer the greatest promise of a rich harvest in a neglected field of thought. From a therapeutical standpoint, the proper view to take of cancer, is that it is a germ disease and should be removed as soon as possible to prevent the infection of the whole system. In this manner we obtain good results and indeed cure the patient, provided we keep the general health in good condition subsequently. Of course the same conditions would cause the malady to recur, hence the necessity of keeping the system as nearly immune as possible. I have a belief based upon experience that arsenic, carried to its constitutional effects will materially inhibit the development of cancer. The therapeutical means usually employed are the knife, electricity, curetting and caustics. From a study of the disease it is clear that if the surgeon makes his incision beyond the limit of the pathological infiltration, there will be recurrence of the disease without new virus. However, we have to consider under what condition is the cutting operation the best method. In mammary cancer it must be admitted that one can remove at a single operation without pain or special danger, a mass of tissue which could not be removed by any other method without great suffering. Yet to my mind even in *this* operation the knife unaided does not promise the best results. There are some parts of the system subject to cancer, where the knife seems to afford the greatest hope of cure. Upon the flexor surface of the forearm epitheliomata sometimes develop and unless seen very early are difficult to handle, and very often an amputation above the elbow is the only security to life. And in cancer of almost all the viscera the knife seems the only shield from somatic death. Having decided to operate with the knife the usual procedure is to cut some distance beyond the macroscopic margin, and to bring the edges together and treat the parts upon antiseptic principles. If the surgeon has removed all the tumors, such a course would be a correct one; but practically it is a fact, there is very frequently a recurrence of the disease. If the parts were not treated antiseptically, but after the extirpation of the tumor, cauterized, and allowed to heal by granulation. Cancer cells close to the margin may be thrown off by inflammatory process and thus a result would be obtained equal to that obtained by a more extended incision, while the wound subsequently closes by a granulation, leaving an insignificant scar. Passing electricity we will speak of the caustic. From time immemorial, various caustics have been used for the removal of cancer, both by the regular profession and by charlatans. Perhaps their use by the latter has interfered with the credit they rightfully deserve at the hand of the former. However, the gentleman who deprecates the use of caustics in any and every case, either has had no experience in their use or his method of application has not been guided by a scientific conception of the pathological processes with which he had to deal. The cauterizers commanding confidence are caustic, potash,

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chloride of zinc and arsenious acid. At one sitting with potash we can destroy necrosis and liquify diseased tissue, and from the resulting inflammatory action its effects will extend beyond the parts destroyed. As there is probably pathologic tissue lying beyond the tumor proper, it will be subjected to the inflammatory process, and as pathological tissue succumbs to this process more readily than normal tissue, these cells are likely to be destroyed by an inflammation of such an intensity as would *still* leave the normal tissue within which they reside in a condition of ability for restoration to a normal state. Therefore the caustic, under such circumstances, will remove more diseased tissue with less destruction to the parts than can be done with the knife, provided the same area of tissue is removed in both operations. But there is another point upon which I desire to touch and that is that from the use of the caustic there is formed in the tissues cauterized a tox-albumen which is destructive to the cancerous organism. Perhaps it is the inflammatory process alone that gives such good results in the primary tumors, but when we see enlarged lymph glands at a distance diminished in size after the cauterization, it is difficult to avoid the view that such an agent must be acting. In the use of arsenious acid I believe we desire more benefit than from any other caustic. I use Marsden's Paste. The fact that the paste can be applied for a longer time upon normal tissue without its destruction than it requires to destroy pathological tissue, shows that it is perhaps what is called elective in its action. I believe, however, that it is a question of vulnerability of tissue as well as the elective action. If this caustic has a preference for the epitheliomatous tissue, then it is easily understood how the paste would destroy the outlying epithelioma whilst the original tissue would be scarcely injured by the inflammatory process. We believe, also, that the local therapeutical effects of arsenic acts as a destructive factor in this disease, a point which should not be lost sight of. The arsenious paste is to be preferred in all cases where it is desirable to save as much tissue as possible, and by the use of its elective, caustic and therapeutical properties, you are very often able to save your patient, which with the knife you can not always do.

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SECTION OF MATERIA MEDICA.

REPORT ON SECTION OF MATERIA MEDICA.

BY D. J. TOWNSEND, M. D., LOHRVILLE, IOWA.

Ladies and Gentlemen of the Iowa State Medical Society:—In making my Report for the year, as chairman of the section on Materia Medica, I realize how utterly preposterous it would be to attempt to spring anything new on the profession in the way of a dissertation on new remedies or new ideas relative to the use of old remedies. It would be absurd to think for a moment that you would sit and listen, with any degree of patience, to a compilation of the claimed to be discoveries in this branch during the last year.

With the facilities we have for the dissemination of literature, and the persistency with which medical men and manufacturing pharmacists rush into print to flood the office of the physician with printed articles, lauding their discoveries and manufactured products, one must be obscure indeed who can not keep in touch with every new idea, hence I shall endeavor to entertain you for a few moments with a few observations of my own.

The ingenuity displayed in the manufacture of new remedies carried on in legitimate channels is truly laudable. It is too often the case, however, carried on purely from mercenary motives which should be severely censured by the profession. Let me speak of a method of charlatanism (that to say the least is disreputable) which has been the outgrowth of this universal method of advertising. There is a certain class of physicians, as soon as a new circular is placed upon their desks by some manufacturer's agent, reads it over very carefully, and their next patient gets a prescription containing the new remedy. The druggist of the town perhaps does not have the new preparation, and when the patient returns to report to the physician that the remedy is not obtainable, he, in a bland and condescending manner, informs the patient that the druggist is behind the times. He at the same time manages to impress upon the mind of his patron the idea that the balance of the profession in that vicinity are similarly situated. While such practice is not countenanced by honest physicians, they readily understand the subterfuge. It is, however, with a certain class, a drawing card and wins for the impostor the ducats that should go to the never overloaded coffers of the consistent medical man. A great majority of our new remedies are sent out to the profession as samples by manufacturing pharmacists, describing their preparation and lauding its superior merits over the products of their competitors, giving its therapeutical uses, the dose, etc.

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While the manufacturer may be honest in his conclusions and may have drawn them from a sound line of reasoning from his standpoint, very many times the young physician who has had no practical experience and who pins his faith and reputation to the above class of literature, will lose both with the first really serious case he has. Not because he has made a wrong diagnosis, not because he has not followed the directions laid down for the administration of the remedy to a technical nicety, but because the authority he has been following is based wholly on an hypothesis that has not been practically demonstrated and found to be correct. The conclusions arrived at had not been made from a practical standpoint. The author might have been a thorough chemist and could tell to a certainty the constituents of the remedy; could say that it possessed laxative, alterative or astringent properties; perhaps had tried these virtues on himself or some of his friends. But he was not a pathologist. He had not made a study of pathological chemistry and personally made a practical demonstration of his theory and made his deductions therefrom. Had this been done in a logical manner his literature would have been of some utility to the young disciple. No successful physician will for a moment pretend to say that he depends on the current literature of the day for his knowledge of the use of medicine, but depends almost entirely on the experience of his perceptions, the medical men of ability with whom he is thrown in contact, and his own observations.

During the last year it has been hinted that there would be a movement put on foot to abolish the chair of materia medica in some of our medical schools and have this branch taught by the other chairs of the faculty. At first glance this might seem feasible from the fact that pathology and therapeutics are inseparable and should be taught at one and the same time, but in fact this is the only argument that could be presented in its favor. On the other hand it is essential in the make up of the successful practitioner: 1st. That he have a thorough knowledge of the normal anatomy of the human body. 2nd. An exhaustive knowledge of the conditions existing in a pathological chemistry. 3rd. A distinct and wide knowledge of the material of medicine from a therapeutical standpoint. 4th. Should be well informed in all the different branches pertaining to our calling, with keen perceptive faculties, strong reasoning power and good judgment. And if these things are taught in a rational manner and from practical deductions we will not find so many failures in the relief of the distressed.

The fields for investigation are so extensive in this department that it would be impossible to saddle the other branches with it without doing great injury. Operative surgery is nothing more than the application of a nice branch of mechanics and stands in the same relation to a medical education as does mathematics to a classical course. Like mathematics every thing can be practically demonstrated. While I would not in the least disparage one of the most useful branches of our course, it is an undeniable fact that when our young men leave our temples of learning they could and would undoubtedly, were the opportunity offered, perform any of the operations of surgery in commendable manner but would not, on the spur of the moment, be able to prescribe intelligently for a scald,

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or diagnose a case of false croup. Surgery is considered at the present day an exact science. That materia medica, beyond a certain limit, is hypothetical, is true to some degree, but to see that the therapeutist is rapidly making an exact science of this branch it is only necessary to compare our standard works of to-day with those of a century ago. The Dispensatory of 1786, which in its preface claims to contain everything known to science at that date relative to materia medica, therapeutics and chemistry, does not contain a single chemical formula. Their remedies were numerous, but looking backward with our present knowledge, we conclude that they depended on fanciful properties supposed to be contained in the drugs used and the results of crude but actual experiment. During the next three score years only very few true deductions were arrived at, but during the last two score years rapid progress has been made of a permanent and scientific nature, and the medical man, it matters not how conservative, is constantly adding to his list of remedies, but using them in a more restricted manner, and as he gradually extends his list he administers them with a greater confidence and certainty of their results than heretofore.

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SECTION OF OPHTHALMOLOGY.

REPORT OF CHAIRMAN OF THE SECTION OF OPHTHALMOLOGY, ETC.

BY JAMES MOORES BALL, M.D., ST. LOUIS, MO.,

Historical Considerations: The wonderful progress made in ophthalmology and allied branches of medicine within the last four decades is most forcibly impressed upon us when we call to mind a few historical facts. Although ophthalmology can boast of an antiquity reaching back to the time of Herodotus; although early Greek and Roman medical writers, as Hippocrates and Galen, mention diseases of the eyes and ears, and Celsus, who lived in the second century after Christ, accurately described the extraction of cataract, the treatment of nasal polypi, and the removal of foreign bodies from the ear; although the Arabian writers, who generally followed blindly the Greek and Roman authors, gave us some new points—Albucasis mentions trichiasis, encanthis, pterygium, staphyloma, hypopyon and fistula lachrymalis—yet it was not until after the brilliant labors of those grand old anatomists, Vesalius, Fallopius, Eustachius, Valsalva, Columbus and Ingrassius, that much real progress could be made. From the middle of the Sixteenth to the middle of the Nineteenth centuries, advance in ophthalmology and otology was by slow and uncertain steps. Rhinology and laryngology were yet unborn. Specialties in medicine have been placed upon a scientific basis only within the last half century. The ophthalmoscope, invented by Helmholtz in 1851, opened to view the only nerve in the body visible without dissection; oblique illumination, employed by Liebreich in 1855, gave us a new aid in diagnosis; the test types of Jaeger and Snellen, published about the same time, enabled the oculist to measure and record visual acuity with accuracy; and the discovery by Von Graefe in 1857, that iridectomy would cure glaucoma, saved thousands of lives from incurable blindness. The work of Donders on the accommodation and refraction of the eye marked an epoch in ophthalmological history. He gave us hypermetropia and explained astigmatism. Time forbids our tracing in even a superficial manner, the successive steps by which otology and rhino-laryngology have reached their present stage of development. The German school of scientists, of which Virchow is the greatest living representative, has done ophthalmology an immense good by directing attention to a thorough study of the normal pathological histology of the eye and ear. The beneficent principle of antisepsis, applied to the eye was a great advance, and the discovery of cocaine, that prince of local anæsthetics, has enabled operative technique to reach an astonishing degree of skill. The inven-

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tion by Helmholtz of the ophthalmometer as a scientific toy, and its re-invention by Javal as a practical instrument for the determination and measurement of astigmatism are facts worthy of mention.

It may not be uninteresting to note that the first man in America to practice ophthalmology and otology as a specialty was the late Dr. E. Williams of Cincinnati, who, fresh from the schools of London, Paris, Vienna and Berlin, located in the Ohio city in 1855. It was he who had the honor to introduce the ophthalmoscope to the surgeons of London, and instructed them in its use. It was for Dr. Williams that, in 1860, in advance of all other American schools, a chair of ophthalmology was established in the Miami Medical College. Although the greatest discoveries in ophthalmology have been contributed by Europeans, yet it is satisfactory to note that in this branch of science Americans have been always abreast of the times. Since the return of Dr. Williams, ophthalmology has found worthy followers among our professional men. Long before this time eye hospitals had been founded; New York Eye and Ear Infirmary in 1820, Massachusetts Eye and Ear Infirmary in 1829, and the Will's Eye Hospital in 1834.

The Relation of the Oculist to the Public Health: In several European countries, where some things were done better than with us, physicians were employed by the State to examine the eyes of school children. This is done particularly to check the progress of myopia, which in some provinces in Germany is alarmingly prevalent, more than fifty per cent. of the population being myopic. The hours of study, the books used, the standard required for promotion, the construction of school houses, and the desks supplied, are all regulated by the oculist. This is as it should be: there is no question that the higher a nation rises in the scale of civilization, the larger does the per cent. of myopia become. Examinations of nearly 1,000 school children, made by myself, show that the per cent. of myopia varies from three or four in the lowest grades to twenty-five or thirty in the highest rooms in the public school. No doubt, among university and college students, the percentage is larger. When we remember that every myopic eye is anatomically an altered eye, and that by means of glasses combined with proper treatment, much can be done to check the progress of the disease, the necessity for an examination of the eyes of school children becomes apparant to all. Though it may seem a radical position, I unhesitatingly say that no child should begin a school career until after an examination of the eyes by a competent person.

Lachrymal Apparatus: Caldwell, of New York, (*N. Y. Med. Journal*, May 27, '93) describes two new operations for obstruction of the nasal duct with preservation of the canaliculi. These operations seem to be of great importance. In ordinary cases of lachrymal obstruction, Caldwell's treatment is as follows:

A probe is passed into the sac, via upper canaliculus, the probe is turned so as to make tissues covering it tense; an incision into the sac is made down upon the probe directly through the tissues; a suture is taken through wall of sac and inner margin of wound; ends of suture are left long for traction to facilitate entrance of instruments into sac. Strictures are

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cut, the probe-pointed knife being used. Dilation up to a No. 12 probe follows, the sac is washed out with antiseptics. When the stricture is cured, the edges of wound in sac are freshened and sewed up. This procedure leaves the canaliculi unharmed and has obvious advantages.

In cases of incurable stricture, located in lower part of the canal, and in all cases where obliteration of the sac is generally practised, Caldwell taps the nasal duct in the middle meatus. In this operation the electric burr is employed after passing the probe as far as possible. The opening is to be made at the seat of stricture, as indicated by measurements, and enlarged upwards as far as necessary. In two cases of bony closure, in which Caldwell employed this method, a complete cure resulted. Evidently this operation is preferable to ablation or obliteration of the sac.

Dr. Samuel Theobald, of Baltimore, who fifteen years ago called attention to the ineffectual use of small probes in lachrymal stricture, has published recently another article on the same subject (*The Canadian Practitioner*, May, 1893.) It is worthy of note that added years of experience have served only to confirm his views. He says: "To-day, while I am using larger probes than formerly, the majority of the profession are not using as large ones as myself. Some of my first critics said it was impracticable to insert such probes, and that I must have overlooked the anatomical arrangement of the canal. The fact was that anatomical observation was the foundation of my theory. I examined a number of skulls and cadavers, and I measured the duct by seeing how large a probe I could pass. In experiments on dry skulls I found that in seventy ducts probed, the average size was 4.7 mm. in diameter. S. Theobald is very confident in his prognosis and says, in speaking of cases of stricture, treated with large probes, "there is no class of cases which I approached with more confidence of a successful issue." He passes the probes every other day, believing that their daily use tends to produce too much inflammation. In two-thirds of all cases, including children, he has used a No. 16. His only objection to this treatment is that the duct may remain too pervious and air pass freely when the nose is blown. While probing, he always prescribes a collyrium of bi-chloride of mercury 1-12000.

New Mydriatic: The most important event in recent ophthalmological progress is the introduction of the new mydriatic, scopolamine. It is an alkaloid obtained from the roots of scopolia atropides. Every mydriatic heretofore in use has been accused of increasing intra-ocular pressure, particularly in aged patients with a tendency to glaucoma. Raehlmann (*Klin. Monatsbl. f. Aug.*, Feb., 1893) concludes that as a mydriatic and antiphlogistic it surpasses all other tropines, including atropine. He has employed scopolamine in all cases in which atropine may be used and has found the new remedy in many cases, at least, equal to atropine, while in others it is entirely superior. The circumstance which will secure scopolamine an enduring place among ophthalmic remedies is that it can be used for a long time in a solution equivalent to a one per cent. solution of atropine without producing the troublesome associated symptoms which so often make the continued use of atropine impossible. Atropine disturbs the appetite when used as an instillation for any length of time. Raehl-

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mann has never known this or a similar effect to follow the use of scopolamine. Only after large doses does the patient complain of dryness of the throat. The state of nervous restlessness, with or without a reddening of the face, and quick pulse, so often found in patients treated with atropine, never occurs after the use of scopolamine. Scopolamine is used in a one-fifth per cent. solution.

Treatment of Pannus by Digestive Ferments: The treatment of trachomatous pannus by digestive ferments is a subject worthy of our attention. Dr. James A. Lydston, of Chicago (*Medical Standard*, August, 1893), has directed the attention of the profession to a method of treatment which has given him good results. He says: "Viewing pannus as a new growth, more or less vascular in type, I surmised that if I could but bring a medicament of powerful digestive properties in contact with it I could favor its removal, and, with this object in view, I resorted to daily inspersions of powdered papoid with boric acid." See *Jour. Am. Med. Ass'n*, Oct. 7, 1893.

Extraction of Cataract: Regarding antisepsis, technique and treatment, after an extraction, there can be no great difference of opinion. Under the head of technique it is proper to say that ophthalmologists differ upon the treatment of the iris. Many, perhaps most operators, prefer to extract without an iridectomy. I prefer to leave the iris intact and, in fact, never make an iridectomy unless compelled to do so. Many of the ablest of our professional brothers, however, still champion the combined operation, *i. e.*, extraction with iridectomy. In deciding this question everything depends upon the personal equation of the operator. Teale took the abandonment of iridectomy as the subject of his Bowman lecture at the meeting of the Ophthalmological Society of last year. Col. Drake-Brockman, who, during the years between 1881 and 1891, made 5,485 extractions at the Madras Ophthalmic Hospital, operates without the iridectomy. Galezowski, Pomeroy, Knapp, Higgins and Trousseau hold to the same view; while, on the other hand, Freeland, Fergus, Swanzy and Sneel champion the combined procedure; and Kaet agrees with Landolt in the advisibility of making a preliminary iridectomy. In regard to antiseptics, the safest practice is that of Sneel which I have always followed, viz.: a new solution is prepared for each case. The cocaine solution, as well as the glass part of the dropper, is boiled.

Eye Treatment of Epileptics: Dr A. L. Ranney, of New York, in the course of an exhaustive article on this subject states that "the principle of treatment of convulsive seizures, by drugs, is wrong; for benumbing the cerebral centers by a drug does not cure the disease." He then proceeds to cite a large number of cases of epilepsy subjected to eye treatment alone. Ranney emphasizes the statement that latent anomalies of the eye muscles are to-day as well proved as the existence of latent hypermetropia. By this he means that the amount of eso-, exo-, or hyperphoria discovered at the first examination of any patient does not represent the actual amount that exists. Ranney says that careful and repeated examinations of the eyes of epileptics should be made, errors of refraction and disorders of mobility should be corrected, atropine should be used in

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determining the refraction, full correction should be given, and great attention should be paid to the fitting of spectacle frames.

At a late meeting of the Ophthalmological Society of the United Kingdom, Mr. Dodd made a report on the condition of the refraction in one hundred cases of epileptics as compared with similar tests upon fifty healthy persons. The effects of the treatment by correction of refraction alone were recorded. Of the one hundred epileptics, seventy-five required glasses and were directed to wear them. Of these, fifty-two obeyed. Of the fifty-two, thirteen had no attacks for an interval of from one to two months; thirty-six were more or less benefited, and three were not influenced. Mr. Dodd concludes that errors of refraction may excite epileptic seizures, that correction of refractive errors is valuable in the treatment of epilepsy; and that other sources of irritation may be suspected where a correction of refraction fails to afford marked relief. Mr. Dodd is to be criticised in this that he did not search for heterophoria. Had he done so, and treated his patients by modern means, I have no doubt his results would have been better. (*New York Medical Journal*, January 13, 20, 27; 1894.)

Ear Excision of Ossicles: In otology no startling advances have been made since last we met. Certain operative procedures, which, only a year or two ago, were classed as of doubtful expediency, have been placed among accepted aids. Excision of the membrana tympani and ossicles has received much attention. Performed by Kessel in 1875 and Schwartze in 1885 for the relief of deafness only, it was our own Dr. Sexton, who first proposed this operation for the cure of chronic aural discharges, and later for the releaf of deafness. At the very start this operation met with formidable opposition. Time and experience have shown that the procedure is based upon sound surgical principles. Dr. S. MacCuen Smith, of Philadelphia, (*Therapeutic Gazette*, July, 1893), in a valuable article upon this subject, has tabulated one hundred and fifty-four cases in which excision of the membrane and one or two ossicles, or both, has been performed. Sixty-nine of these patients presented the non-suppurative variety of middle-ear disease. Many of them suffered from distressing tinnitus, severe pain, vertigo, and marked impairment of hearing. Their ages ranged from twenty-one to eighty-one years; their period of suffering from two to forty years; the time elapsing after the operation varied from three months to four years. The writer says: "The improvement in tinnitus and vertigo has been in many cases most striking and satisfactory, notwithstanding the little hope that could be offered for their relief, in some of the cases before operation. The probable improvement of hearing in this class of cases is, of course, not marked by so many favorable possibilities as in the suppurative variety, and yet a perusal of the carefully recorded results will, we think, be convincing that the operation in selected cases is now justifiably demanded." The conclusions of Dr. Smith, which are too volumnious for insertion here, deserve perusal. In two cases in which the stapes also were removed, the patients suffered from prolonged staggering vertigo. (See *Archives*, April, 1893.)

Dr. B. Alexander Randall, of Philadelphi, (*Therapeutic Gazette*, February, 1894) in an interesting article entitled: "The Cases Suitable for

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Excision of the Drumhead and Ossicles," says: "In the non-suppurative cases of catarrhal deafness there is no criterion by which to clearly recognize those for which excision is advisable. Instances of impaired bone conduction are almost sure to disappoint, and these must be excluded by tests with low as well as high-pitched tuning-forks. Gelle's tests may indicate anchylosis of the stapes and direct any intervention to it rather than to the drum-head and larger ossicles. Urgent demand for relief may be enforced by marked aural vertigo or maddening tinnitus; but this will be very rarely the result of tympanic catarrh. Serious vertigo of tympanic origin is uncommon even in the cicatricial cases that result from destructive suppuration. So, too, as to the tinnitus; it is often unimproved by excision, not rarely caused or increased by it. In only a small group of patients, impossible to designate beforehand, will the removal of the drum membrane and larger ossicles give any noteworthy improvement which does not sink to the vanishing point within a year or two. Schwartze, the pioneer in this field, has operated in rare instances since 1873 without getting any success that he has cared to publish, although regarding excision as "not contra-indicated."

Lucæ, from an experience of fifty-three cases, with notable gain in nine, slight gain in nineteen, and loss in seven, has abandoned excision. Deuch carefully selected ten cases upon which excision was performed with notable gain in six and slight improvement in four. Total loss of hearing following excision has been reported by Kessel, Schwartze and Wuerdeman. Blake, of Boston, has recently said that twenty-five years' experience as an aurist has caused him to believe in the uselessness of surgery in these cases.

Ear Examination of Mastoid Cells by Trans-illumination: Caldweel (*New York Medical Journal, July 15, 1893*) has called attention to the practicability of diagnosing purulent collections in the mastoid cells by means of trans-illumination. A minature electric lamp, fed by five-cell battery, is inserted into the external auditory canal. The lamp is protected by a piece of rubber tubing, furnished with a fenestra, and the meatus is closed by a plug of larger tubing. "In a perfectly dark room the lamp is inserted well into the external auditory meatus, the fenestra directed backward, and the current made. Instantly the healthy mastoid is illuminated with a ruddy glow extending from the apex to the lateral sinus and to the limits of the cells above. The reverse manner may be more satisfactory in a given case, as when the canal is small, obstructed or painful, and may be used with a larger lamp. A speculum of large size being placed as for examination of the membrana tympani, the electric lamp, incased in a rubber tubing projecting slightly beyond the lamp, is pressed against the mastoid and the current made, when the external auditory canal and middle ear will be filled with a rosy light from the posterior wall. * *

* If the cells are occupied by a purulent collection, the glow will be absent and the cells will be dark. Comparison with the opposite healthy side renders the diagnosis of pus in the mastoid cells complete, whether or not the usual symptoms are present; for suppurative mastoiditis may exist without external indications, which, indeed, is the most dangerous form, as the process tends to extend inward, not outward."

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Literature: Since our last convention many valuable works on eye, ear, nose and throat diseases have appeared in various languages. The science of ophthalmology has been enriched by the book of Norris and Oliver; a new edition of Noyes' book; an English translation of Fuchs' book; a treatise on errors of refraction and motility—by Tiffany; a little volume by Savage; a new edition of Jules, and others. Burnett's System of Diseases of the Ear, Throat and Nose, a monumental book, has been published; the fourth edition of Fields' Otology and new editions of Politzer and Gruber are also in the market.

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A NOVEL METHOD OF TREATING NASO-PHARYNGEAL CATARRH.

BY W. C. PIPINO, M. D., DES MOINES, IOWA.

One cold day in January Dr. Taggart Priestly came into my office with a bottle in one hand and a copy of the *Medical News* in the other. "Here," said he, "is a bottle of sterilized sweet oil, I want you to inject it into my tear ducts." At the same time he called my attention to an article from the pen of Dr. Bates in the above mentioned journal, entitled "A New Method of Treating Naso-Pharyngeal Catarrh." The writer of the article stated that after relieving a number of patients of dacryocystitis by syringing out their nasal ducts, they were relieved of their nasal catarrh. This hint determined him to investigate the subject, and after numerous trials with various remedies, he finally settled upon sweet oil as the most efficacious. His method of treatment consisted in injecting the oil with a specially devised syringe into the sac and nasal duct.

Some six years ago Dr. Priestly placed himself under my care to be treated for nasal obstruction. On examination, I discovered both nasal cavities to be nearly occluded from hypertrophy of the inferior turbinated tissues and cartilaginous spurs projecting from the septum. There was also closure of both tear-ducts causing constant epiphora, which the doctor said gave him the reputation of being a very sympathetic doctor, always ready to weep when at the bedside of his patients. The hypertrophies and spurs were removed by the electro-cautery and nasal saw. The tear-ducts were dilated and probed at regular intervals. Great relief followed this treatment. The doctor, however, told me he was troubled more or less with difficulty in breathing through his nose ever since; to overcome this and being encouraged by the words of the writer of the article above mentioned, he desired me to apply the treatment. The results in Dr. Priestly's case were so good I determined to try it in others.

Just what there is in the oil or how it produces the favorable results I am unable to say; Dr. Bates attempts to explain its action on the ground that it affects the nervous system, probably by osmosis. No doubt the thought here suggests itself to you, why not spray the oil into the nasal passages from an atomizer. This has been done, but not with the same benefit as when introduced through the tear passages. The immediate effect of the oil is to clear the passage, loosen the accumulation of mucus and relieve pain. That form of chronic catarrh known as intumescent rhinitis, and by some considered as one of the forms of hypertrophic catarrh, is benefitted most by this treatment. This variety is characterized by intermittent swelling of the Schneiderian mucous membrane, with more or less occlusion of the nasal passages. In atrophic rhinitis I have

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not used it, as I believe there are other remedies that give better results.

Permit me to relate a case that had given me much trouble until I began the oil treatment, when improvement rapidly took place.

Miss L., a young lady school teacher, presented herself for treatment over a year ago. At that time she complained of an inability to breath through the nose, a constant dropping of mucus into her throat and a tendency to easily catch "cold." These attacks came on so frequently as to seriously interfere with her teaching, and unless relief was obtained she would be compelled to give up her position. On examination, the turbinates together with the pharyngeal and faucial tonsils were found to be enormously hypertrophied, and covered with a thick tenacious mucus that excited nausea and vomiting on attempts to clear the throat. The treatment in this case consisted in removing the hypertrophies by the snare and electro-cautery, followed by antiseptic and astringent sprays. Nasal breathing and general improvement soon followed.

Entire freedom from a consciousness of nasal trouble was not obtained until attention was directed to the tear ducts and the oil treatment resorted to. Three days after the first treatment was applied she expressed satisfaction from the relief obtained. The oil was syringed down the nasal-duct on an average of three times a week. At the present time she feels entirely cured and cannot see the necessity of a continuance of the treatment. I might continue the recital of cases until you become weary, but enough has been said to direct your attention to the method of treatment in these cases.

So far I am highly pleased with the results obtained, as no other method or treatment has given me such uniform, excellent and lasting results. I hope therefore, some of you at least, will be inspired with a desire to try it and report the results of your experience at some future meeting.

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PART III.

CONSTITUTION

AND

BY-LAWS.

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CONSTITUTION.

REVISED MAY, 1894.

ARTICLE I.

This Society shall be known as the IOWA STATE MEDICAL SOCIETY; it shall be auxiliary to the American Medical Association, and exercise its functions by virtue of the voluntary and plighted faith of its members.

ARTICLE II.

The object of this Society shall be the advancement of medical knowledge, the uniformity of medical ethics, the promotion of harmony and fraternity in the medical profession, the protection of the interests of its members and the promotion of all measures adapted to the relief of suffering, to improve the health and protect the lives of the community.

ARTICLE III.

SECTION 1. This Society shall consist of delegates, permanent members, members by invitation and corresponding members, who shall be physicians and surgeons, authorized to practice medicine and surgery by a medical college qualified to grant a diploma and acknowledged by the American Medical Association.

SEC. 2. The delegates and permanent members shall be residents of the State of Iowa. The delegates shall receive their appointment from permanently organized county or local societies in the ratio of one for every three of their regular resident members, with an additional delegate for a fraction greater than one-half that number; provided that persons belonging to more than one organization shall only be accredited and represented in one, whichever they may elect. The professional staff of the State Insane, Deaf and Dumb and Blind Asylums shall each be entitled to one delegate.

SEC. 3. The permanent members shall consist of those who have served in the capacity of delegates and have maintained their membership as provided by the By-laws.

SEC. 4. Members by invitation shall consist of delegates from corresponding societies, and of reputable practitioners of this state not accredited as delegates or permanent members, who shall be introduced by at least two members present, or by letters signed by two permanent members, when they may receive their appointment by a vote of the Society, and shall hold their connection with the Society until the close of the annual session at which they were received, with the privilege of participating in all the business of the Society except the right of voting.

SEC. 5. Physicians and surgeons residing in the United States, eminent in the profession and active in promoting its interests, may be elected corresponding members by a vote of two-thirds of the members present; but not more than two corresponding members shall be elected at any annual session.

SEC. 6. In order to secure representation in the Iowa State Medical Society, all Auxiliary societies must furnish to the Secretary of this Society, on or before the 1st of March each year, a list of their officers and members, as well as a statement of the time and place

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of holding their meetings, together with such declarations of their requirements for membership as shall enable the Secretary and Committee of Arrangements to judge of the qualifications, and every delegate sent by such auxiliary society, before election to this Society as a permanent member, shall present to the Committee of Arrangements a diploma, giving name, place and date of graduation, or satisfactory evidence of the possession thereof.

ARTICLE IV.

SECTION 1. The officers of this Society shall be a President, First and Second Vice Presidents, Secretary, Assistant Secretary, Treasurer and Board of Trustees. The officers shall be elected annually—the President and Vice Presidents by ballot; the others as the Society may direct at each meeting. The President and Vice Presidents shall assume the duties of their respective offices at the last session of the annual meeting at which they were chosen; the other officers immediately after election, except the Assistant Secretary, whose duties shall commence at the next meeting.

SEC. 2. No member of this Society shall be eligible to the office of Vice President who has not been a member in good standing for four years and attended at least three annual meetings. No member shall be eligible to the office of President who has not been a member for a period of eight years and attended at least five annual meetings.

ARTICLE V.

SECTION 1. The President shall preside at all meetings of the Society, preserve order and decorum, decide questions of order, subject to an appeal to the Society. He shall deliver (or, if absent, shall furnish to be read), an address on some suitable subject at the opening of the annual meeting subsequent to his election.

SEC. 2. In the absence of the President, the Senior Vice President shall act as President, and perform all the duties of his office.

SEC. 3. The Secretary shall keep, or cause to be kept, a correct record of all the transactions of the Society in a permanent form; give due notice of the next ensuing annual meeting by sending a notice to each member and the secretaries of local and county medical societies at least one month before such meeting; notify all members of committees of their appointment and of the duties assigned to them. He shall hold correspondence with other permanently organized medical societies, serve as a member of the Committee of Publication, supervise the distribution of the published Transactions to all members who have paid the annual assessment, and carefully preserve the archives and unpublished transactions of the Society.

SEC. 4. The Assistant Secretary shall aid the Secretary in his duties, and perform them temporarily when the office is vacated by resignation, removal or death. He shall serve as a member of the Committee of Arrangements.

SEC. 5. The Treasurer shall receive and be accountable for all moneys that shall come into his hands by virtue of any of the By-laws of this Society, or otherwise; he shall give good and sufficient bonds to the Trustees for the safe-keeping and disposal of his trust, and shall make a full report to the Society annually.

SEC. 6. A Board of Trustees, consisting of six members, shall be elected. Two members, elected each year, shall hold office for the term of three years, and must be residents of different congressional districts. The Trustees shall hold the bond of the Treasurer, and have general supervision of the affairs of the Society not otherwise provided for. At a request of the majority of the Board, the President may call a special meeting or change the time of holding the annual meeting of the Society.

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ARTICLE VI.

This Society shall hold its meetings on the third Wednesday in May of each year, except when the meeting of the American Medical Association takes place in May, when this Society shall hold its meeting on the third Wednesday in April.

ARTICLE VII.

The code of ethics of this Society shall be that of the American Medical Association, which is hereby acknowledged as binding upon all of its members, and shall govern the profession of the State of Iowa.

ARTICLE VIII.

No person shall be received as a delegate, nor allowed to sit as a permanent member, nor as a member by invitation, who is under sentence of expulsion or suspension from his local society; but when reinstated in the local society, such action, properly authenticated, shall enable him to resume his membership in this Society; and such suspension shall be construed as causing a suspension of annual dues during its continuance.

ARTICLE IX.

The following standing committees, each composed of five members, shall be organized at each annual meeting:

A Committee of Arrangements, of which the Assistant Secretary shall be a member. They shall make all necessary arrangements for the next meeting, and perform such other duties as the By-laws may provide.

A Committee of Publication, of which the Secretary and Treasurer shall be members, to procure the publication of the Transactions under the direction of the Society.

A Committee on Medical Ethics, of which the retiring President shall be chairman. They shall investigate and report upon all cases of differences arising between members, all alleged violations of the Code of Ethics, and all cases of appeal from local or county societies.

The following standing committees on medicine and surgery, comprised of three members each shall be organized at each annual meeting, whose duties it shall be to receive all papers contributed to the Society on the subjects connected with their chairs; and before any paper is read it shall have the recommendation of the Committee and be handed to the Committee on Arrangements:

Committee on Medicine.
Committee on Surgery.
Committee on Obstetrics and Gynecology.
Committee on Ophthalmology and Otology, etc.
Committee on Materia Medica.
Committee on Hygiene.
Committee on State Medicine.
Committee on Diseases of the Mind and Nervous System.

It shall be the duty of the chairmen of each section of these committees on medicine and surgery to report to the Society at each reunion a schedule of what is handed them, and should these be too numerous or too voluminous, and thereby occupy too much time of the Society to be read in full, the committee shall give the Society a synopsis of their contents. It shall also be the duty of each chairman of these committees to give to the Society, annually, a condensed report of advancement in the science of medicine and surgery during the interval of the sessions of the Society. These reports may be referred to the Committee

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on Publication or returned to the author with the recommendation to publish in some medical journal, and permission to announce that they were read before this Society. The Committee will be expected to use their discretion in publishing only such of the reports as, after careful examination, it may conclude will be instructive to the profession and do credit to the Society.

A Committee on Necrology, consisting of one member from each congressional district, shall be appointed. It shall collect such facts in regard to the personal history and professional career of its deceased members as may be of interest to the profession, and shall report the same to the Society, which report shall go to the Committee on Publication.

A Committee on Revision of the Constitution and By-Laws shall be appointed each year, to whom shall be referred any proposed changes or amendments.

ARTICLE X.

Every delegate who is not already a member of this Society shall, after presenting his credentials, pay the Treasurer the sum of three dollars, and sign the Constitution, with the name of the institution of which he is a graduate, and date of graduation. The annual dues shall be such as shall be fixed by the By-laws, which, if allowed to remain unpaid for three years, shall cause a forfeiture of permanent membership that can be renewed only as provided by Article III.

ARTICLE XI.

All resignations of membership shall be made in writing, and be accompanied with a certificate from the Treasurer that all the dues to the Society have been satisfied, and from the Committee on Ethics, who shall attest the member has been guilty of no conduct such as might subject him to discipline, if charges were preferred against him.

ARTICLE XII.

Any alteration or amendment of this Constitution must be submitted in writing, and if submitted at the first session of the annual meeting and read at each session, may be adopted at the last session, if the vote be unanimous; but if not, it must lie over until the next annual meeting, when it may be adopted by a two-thirds vote of the members present.

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BY-LAWS.

ARTICLE I.

The order of business at the annual meeting of this Society shall at all times be subject to the vote of two-thirds of the members present, and until permanently changed, except when for a time suspended, shall be as follows, viz:

1. Calling the meeting to order by the President, or, in his absence, by one of the Vice Presidents.

2. The report of the Committee of Arrangements on the credentials of members, after they have registered their names and address, and the name of the society or institution they represent, or if in attendance as permanent members.

3. The report of names and the election of members by invitation.

4. Reading the minutes of the last meeting.

5. Reading notes from absentees.

6. Resolutions introducing new business or instructions to standing committees, which shall lie over for consideration.

7. The annual address of the President at the opening of the second session.

8. The appointment of a committee of one from each congressional district, to nominate officers and organize the standing committees, and select the place for the next meeting.

9. Reception of the reports of special committees and voluntary communications.

10. Report of the Treasurer and standing committees.

11. Report of Nominating Committee, election of officers, and selection of delegates to the American Medical Association and other societies.

12. Miscellaneous business.

13. Reading of the minutes and their correction.

14. Adjournment.

ARTICLE II.

The Committee of Arrangements shall verify the credentials of delegates, receive and examine all applications and letters of introduction presented by those wishing to become members by invitation; recommend the number and length of sessions to be held daily, receive and announce all voluntary communications, and take general supervision of the arrangement of business coming before the meeting, reporting from time to time as it may be necessary.

ARTICLE III.

Ten members of this Society, including two officers, shall constitute a quorum, and may proceed to business.

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ARTICLE IV.

Every member of this Society shall pay to the Treasurer the sum of two dollars annually before participating in the business of the meeting, and if an absent member fail to remit his annual dues, he shall not be entitled to receive a copy of the Transactions.

ARTICLE V.

No money shall be drawn from the treasury except by a vote of the Society, save such money as shall be needed by Secretary to defray current expenses, which amount shall be approved by the President.

ARTICLE VI.

The Treasurer of this Society shall, before entering upon his duties, give to the Trustees a good and approved bond to the amount of twenty-five hundred dollars ($2,500).

ARTICLE VII.

There shall be appointed annually by the incoming President, for the next ensuing year, a Committee of Finance, consisting of three members, whose duty it shall be to examine and audit the accounts of the Secretary and Treasurer, to pass upon all bills referred to them, to examine the books and accounts of any officer whenever they may think it necessary, to suggest such means as they may deem expedient with regard to the finances of the Society, and to make their report for the past fiscal year immediately after the 12th order of business is disposed of.

ARTICLE VIII.

Any violation of the Constitution, By-laws, or Code of Ethics, shall constitute just grounds for impeachment, and any member convicted of such violation shall be liable to censure, suspension or expulsion. A vote of two-thirds shall be required to censure or suspend, and one of three-fourths to expel.

ARTICLE IX.

In case of charges being preferred against any member, they shall immediately be referred, without discussion, to the Committee on Ethics, which shall furnish the accused with a written copy, and, if he desire, shall afford him an opportunity of knowing the character of the evidence against him; shall receive and consider such as he may desire to present, and shall make its report to the Society as soon as practicable. If it considers it necessary, or the Society direct, it shall accompany its report with a synopsis or full statement of the evidence. The vote shall be taken without discussion or delay, unless some member desires explanation from the committee upon a point definitely stated.

ARTICLE X.

All committees shall be appointed by the presiding officer unless otherwise ordered by the Society. He shall also appoint, at each annual meeting, one member from each Society or institution represented in or affiliating with this Society, who shall act as a reporter, and whose duty it shall be to communicate to the chairman of the appropriate committee a concise report of all cases of special interest, or the prevalence of any epidemic that may occur in their several localities, or be reported to the societies; such reports being made at least thirty days previous to the annual meeting.

ARTICLE XI.

The meetings of this Society shall be conducted according to parliamentary rules, and the decisions of the President shall be respected, unless properly appealed from and reversed by the Society. A motion or resolution shall be reduced to writing if any member desires it.

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ARTICLE XII.

The Committee on Nominations shall report to the Society as candidates for President the two members who received the highest number of votes at the meeting of the committee.

ARTICLE XIII.

Any of the foregoing articles of these By-laws may be amended or temporarily suspended by a vote of three-fourths of the members present at any meeting.

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PART IV.

MISCELLANEOUS.

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OFFICIAL REGISTER.

[FROM DATE OF ORGANIZATION.]

1850

Enos Lowe	President
D. L. McGugin and J. D. Elbert	Vice-Presidents
H. M. Matthews	Recording Secretary
J. F. Sanford	Corresponding Secretary
G. R. Henry	Treasurer
J. F. Dillon	Librarian

1851

D. L. McGugin	President
J. F. Henry	First Vice-President
J. M. Witherwax	Second Vice-President
E. D. Ransom	Recording Secretary
J. F. Sanford	Corresponding Secretary
S. Ramage	Treasurer
J. H. Rauch	Librarian

1852

J. D. Elbert	President
J. F. Henry	First Vice-President
J. M. Witherwax	Second Vice-President
S. L. Craig	Recording Secretary
J. F. Sanford	Corresponding Secretary
J. C. Weir	Treasurer
M. Cousins	Librarian

1853

J. M. Witherwax	President
Thomas Siveter	First Vice-President
George Reeder	Second Vice-President
J. H. Rauch	Recording Secretary
D. L. McGugin	Corresponding Secretary
G. R. Henry	Treasurer
Asa Morgan	Librarian

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1854

George Reeder	President
J. M. Robertson	First Vice-President
D. L. McGugin	Second Vice-President
J. Howes	Recording Secretary
C. L. Chambers	Corresponding Secretary
J. H. Rauch	Librarian

1855

Thomas Siveter	President
J. H. Rauch	First Vice-President
W. L. Craig	Second Vice-President
W. Bird	Recording Secretary
D. Atkinson	Corresponding Secretary
J. J. Page	Treasurer

1856

J. C. Hughes	President
A. D. Wood	Vice-President
M. Cousins	Recording Secretary
D. L. McGugin	Corresponding Secretary
T. Siveter	Treasurer
H. Carpenter	Librarian

1857

Thomas Siveter	President
M. B. Cochran	Vice-President
J. C. Stone	Recording Secretary
T. J. Saunders	Corresponding Secretary
James Gamble	Treasurer
H. Carpenter	Librarian

1858

J. H. Rauch	President
E. S. Barrows	Vice-President
J. W. H. Baker	Recording Secretary
W. Bird	Corresponding Secretary
M. B. Cochran	Treasurer

1859

E. S. Barrow	President
George Reeder	Vice-President
Allen Phillips	Recording Secretary
Oliver George	Corresponding Secretary
M. B. Cochran	Treasurer

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1860

R. S. Lewis	President
J. C. Hughes	Vice-President
J. M. Alder	Corresponding Secretary
C. W. Belden	Treasurer

1861

J. F. Henry	President
H. T. Cleaver	Vice-President
J. H. Boucher	Recording Secretary
R. J. Paterson	Corresponding Secretary
P. McLaren	Treasurer

1862-63

There was no meeting of the Society in these years.

1864

M. B. Cochran	President
J. W. H. Baker	Vice-President
S. B. Thrall	Recording Secretary
R. J. Paterson	Corresponding Secretary
P. McLaren	Treasurer

1865

J. C. Hughes	President
J. Williamson	Vice-President
J. W. H. Baker	Recording Secretary
W. F. Peck	Corresponding Secretary
William Watson	Treasurer

1866

J. W. H. Baker	President
J. C. Lay	Vice-President
W. F. Peck	Recording Secretary
A. M. Carpenter	Corresponding Secretary
M. B. Cochran	Treasurer

1867

William Watson	President
E. Whinnery	Vice-President
A. G. Field	Recording Secretary
E. J. B. Statler	Corresponding Secretary
M. B. Cochran	Treasurer

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1868

Philip Harvey	President
J. W. H. Baker	Vice-President
A. G. Field	Recording Secretary
J. Williamson	Corresponding Secretary
M. B. Cochran	Treasurer

1869

S. B. Thrall	President
N. Steele	Vice-President
A. G. Field	Recording Secretary
E. A. Hazen	Corresponding Secretary
H. L. Whitman	Treasurer

1870

James Gamble	President
N. Steele	Vice-President
George P. Hanawalt	Recording Secretary
J. Williamson	Corresponding Secretary
J. M. Robertson	Treasurer

1871

A. G. Field	President
J. M. Robertson	Vice-President
George P. Hanawalt	Recording Secretary
J. F. Ely	Corresponding Secretary
J. W. Gustine	Treasurer

1872*

J. Williamson	President
A. M. Carpenter	First Vice-President
J. W. Smith	Second Vice-President
J. W. Gustine	Treasurer
George P. Hanawalt	Secretary
J. D. McCleary	Assistant Secretary

1873

W. S. Robertson	President
William Cornes	First Vice-President
John Bower	Second Vice-President
J. W. Gustine	Treasurer
S. B. Thrall	Secretary
J. F. Kennedy	Assistant Secretary

*The Constitution and By-Laws adopted this year provide for the election of two Vice-Presidents and a Secretary and Assistant Secretary instead of "Recording" and "Corresponding" Secretary.

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1874

H. T. Cleaver	President
J. G. House	First Vice-President
T. J. Caldwell	Second Vice-President
J. W. Gustine	Treasurer
S. B. Thrall	Secretary
J. F. Kennedy	Assistant Secretary

1875

W. F. Peck	President
H. Ristine	First Vice-President
H. Osborne	Second Vice-President
J. W. Gustine	Treasurer
S. B. Thrall	Secretary
J. F. Kennedy	Assistant Secretary

1876

H. C. Bulis	President
H. Ristine	First Vice-President
S. B. Chase	Second Vice-President
J. W. Gustine	Treasurer
S. B. Thrall	Secretary
J. F. Kennedy	Assistant Secretary

1877

H. Ristine	President
J. W. Gustine	First Vice-President
L. P. Fitch	Second Vice-President
J. F. Kennedy	Secretary
G. O. Mogridge	Assistant Secretary
G. R. Skinner	Treasurer

1878

A. M. Carpenter	President
D. W. Crouse	First Vice-President
G. W. Carter	Second Vice-President
J. F. Kennedy	Secretary
W. W. Grant	Assistant Secretary
G. R. Skinner	Treasurer

1879

G. P. Hanawalt	President
A. W. McClure	First Vice-President
D. Scofield	Second Vice-President
J. F. Kennedy	Secretary
George W. Tibbits	Assistant Secretary
G. R. Skinner	Treasurer

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1880

S. B. Chase	President
T. J. Caldwell	First Vice-President
L. J. Alleman	Second Vice-President
J. F. Kennedy	Secretary
M. H. Waples	Assistant Secretary
G. R. Skinner	Treasurer

1881

T. J. Caldwell	President
D. Scofield	First Vice-President
M. H. Waples	Second Vice-President
J. F. Kennedy	Secretary
L. C. Swift	Assistant Secretary
G. R. Skinner	Treasurer

1882

D. Scofield	President
S. E. Robinson	First Vice-President
H. L. Getz	Second Vice-President
J. F. Kennedy	Secretary
D. Macrae	Assistant Secretary
G. R. Skinner	Treasurer

1883

S. E. Robinson	President
H. C. Huntsman	First Vice-President
D. W. Crouse	Second Vice-President
A. A. Deering	Secretary
A. C. Simonton	Assistant Secretary
G. R. Skinner	Treasurer

1884

H. C. Huntsman	President
H. B. Ransom	First Vice-President
C. C. Griffin	Second Vice-President
J. F. Kennedy	Secretary
G. E. Crawford	Assistant Secretary
G. R. Skinner	Treasurer

1885

D. W. Crouse	President
A. W. McClure	First Vice-President
A. L. Wright	Second Vice-President
J. F. Kennedy	Secretary
L. C. Swift	Assistant Secretary
G. R. Skinner	Treasurer

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1886

A. W. McClure	President
J. C. Hinsey	First Vice-President
D. S. Fairchild	Second Vice-President
S. S. Lytle	Secretary
John P. Savage	Assistant Secretary
G. R. Skinner	Treasurer

1887

J. C. Hinsey	President
Donald Macrae	First Vice-President
J. C. Shrader	Second Vice-President
S. S. Lytle	Secretary
A. J. Crawford	Assistant Secretary
G. R. Skinner	Treasurer

1888

Donald Macrae	President
Benj. McCluer	First Vice-President
J. D. McCleary	Second Vice-President
S. S. Lytle	Secretary
C. F. Darnall	Assistant Secretary
G. R. Skinner	Treasurer

1889

J. M. Emmert	President
Geo. F. Jenkins	First Vice-President
E. F. Clapp	Second Vice-President
C. F. Darnall	Secretary
J. W. Cokenower	Assistant Secretary
G. R. Skinner	Treasurer

1890

Wm. D. Middleton	President
J. D. McCleary	First Vice-President
J. L. Whitley	Second Vice-President
C. F. Darnall	Secretary
C. S. Chase	Assistant Secretary
G. R. Skinner	Treasurer

1891

Geo. F. Jenkins	President
C. M. Hobby	First Vice-President
J. A. Charlton	Second Vice-President
C. F. Darnall	Secretary
J. W. Cokenowe	Assistant Secretary
G. R. Skinner	Treasurer

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1892

C. M. Hobby	President
Lewis Schooler	First Vice-President
A. L. Wright	Second Vice-President
C. S. Chase	Secretary
Mary B. Tuttle	Assistant Secretary
G. R. Skinner	Treasurer

1893

Lewis Schooler	President
A. L. Wright	First Vice-President
H. B. Young	Second Vice-President
C. S. Chase	Secretary
C. E. Currie	Assistant Secretary
G. R. Skinner	Treasurer

1894

A. L. Wright	President
D. S. Fairchild	First Vice-President
T. J. Maxwell	Second Vice-President
J. W. Cokenower	Secretary
F. E. Sampson	Assistant Secretary
G. R. Skinner	Treasurer

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ROLL OF MEMBERS.

**Present at the meeting of 1894.*
†Delegates, 1894.

NAME	ADDRESS	COLLEGE	CLASS
Adams, J. W.	Des Moines	Rush Medical	
Allen, C. W.*	Story City	University of Vermont	1882
Amos, A. R.†	Des Moines	Rush Medical	1882
Anderson, A. A.*	Des Moines	Rush Medical	1882
Applegate, A. J.*	Indianola	Physicians and Surgeons, Keokuk	1864
Appleby, G. W.	Bristow	Chicago Medical	1885
Atkinson, Clara E.†	Des Moines	State University of Iowa	1876
Auld, J. M.	Keota	Physicians and Surgeons, Keokuk	1880
Avery, Milo	Aurelia	Rush Medical	1884
Baker, E. L.	Indianola	Louisville Medical	1873
Baker, L. J.	Ottumwa	Jefferson	1875
Bagley, G. L.*	Des Moines	Cleveland Medical	1885
Bailey, S.†	Mt. Ayr	Rush Medical	1879
Ball, J. M., Jr.*	St. Louis, Mo.	State University of Iowa	1884
Ballah, W. J.	Washta	Detroit Medical College	1884
Barfoot, A. F.†	Decorah	Medical Department Iowa State University	1886
		Jefferson Medical	1887
Barnes, H. E. W.*	Creston	State University of Iowa	1873
Barr, G. Walton.*	Keokuk	Jefferson Medical	1884
Barringer, J. C.	Oskaloosa	Starling Medical College	1873
Barstow, J. M.	Council Bluffs	Physicians and Surgeons, Keokuk	1880
Batchelder, F. P.	Lyons	Rush Medical	1881
Beane, J. V.	Fairfield	Bellevue Hospital	1868
Beggs, George W.	Sioux City	Rush Medical	1862
Bertram, William	Keokuk	Berlin, Prussia	1849
Beam, W. W.	Rolfe	State University of Iowa	1886
Beck, J. W.†	Des Moines	State University of Iowa	1881
Berry, A. K.†	Chillicothe	State University of Iowa	1884
Berry, R. P.	Clermont	McGill University, Montreal	1888
Bergen, A. C.	Sioux City	Long Island Hospital	1879
Bice, D. C.	De Soto		
Bigelow, I. S.	Dubuque	Rush Medical	1881
Biller, J. G.	Cherokee	Detroit Medical	1884
Boot, G. W.	Spencer	Sioux City Medical, Iowa	1893
Bosbyshell, C. B.*	Glenwood	Jefferson Medical	1854
Bowen, A. B.	Maquoketa	Albany Medical	1868

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NAME	ADDRESS	COLLEGE	CLASS
Bower, E. L.	Guthrie Centre	University of Michigan	1886
Bradley, C. C.*	Manchester	Bellevue Hospital	1867
Brainard, Dudley S.	Stacyville	University of Buffalo	1875
Branson, Laura H.*	West Branch	State University of Iowa	1885
Braunsworth, J. S.	Muscatine	State University of Iowa	1876
Brockman, D. C.	Ottumwa	Sta e University of Iowa	1878
Brooks, A. L.	Audubon	Rush Medical	1883
Brookings, D. J.	Woodward	Rush Medical	1869
Brown, C.	Sac City	Physicians and Surgeons, Keokuk	1877
Bulis, H. C.	Decorah	Vermont Medical Jefferson Medical	1854 1888
Bundy, W. C.†	Aurelia	Physicians and Surgeons, Chicago	1885
Butler, M. S.†	Cherokee	State University of Iowa	1864
Burbank, Oscar*	Waverly	Medical Department, Harvard	1848
Burch, G. W.*	Burlington	Physicians and Surgeons, Keokuk	1890
Burnard, H. W.†	Independence	Chicago Medical	1889
Burt, C. I.	Lake City	Physicians and Surgeons, Keokuk	1887
Caldwell, J. T.	Adel	Physicians and Surgeons, Keokuk	1863
Campbell, C. L.	Lewis	Miami Medical	1881
Cannon, Joseph.*	Des Moines	Physicians and Surgeons, Des Moines	1892
Cantwell, A. W.	Davenport	University of Michigan	1869
Carder, J. D	Iowa City	Long Island Hospital	1876
Carl, F. F.	Nichols	State University of Iowa	1886
Carhart, G. L.	Marion	Albany Medical	1848
Carrothers, F. S.*	Des Moines	Woman's Medical, Chicago	1885
Carroll, J. M.	Laurens	State University of Iowa	1879
Chamberlain, H. D.*	Nevada	University of Michigan	1876
Chappell, Geo. M.*	Des Moines	Iowa College Physicians and Surgeons	1890
Chapman, R. U.†	Des Moines	Iowa College Physicians and Surgeons	1892
Charlton, J. B.	Clear Lake	State University of Iowa	1872
Chase, C. S.*	Waterloo	Rush Medical	1882
Clapp, E. F.*	Iowa City	Bellevue Hospital	1872
Clarke, Edward F.	Rockwell Junct.	Rush Medical	1891
Clarke, J. Fred	Fairfield	University of Pennsylvania	1889
Clark, E. W.*	Grinnell	Rush Medical	1871
Clark, R. D.	Akron	Rush Medical	1875
Clark, S. W.	Oskaloosa	State University of Iowa	1886
Claybaugh, J. P.†	Creston	Rush Medical	1883
Claybaugh, W. W.†	Dexter	Rush Medical	1883
Cleaves, R. L.	Cherokee	Harvard Medical	1869
Coad, N. G. O.*	Hull	University of Vermont	1887
Cobb, E. A.*	Harlan	Charity Hospital, Medical	1868
Coggswell, F. A.	Swaledale	State University of Iowa	1889
Cokenower, J. W.*	Des Moines	Louisville Medical	1880
Conniff, R. E.*	Sioux City	State University of Iowa	1884
Cole, D. L.†	Bussey	Physicians and Surgeons, Keokuk	1881
Cole, J. F.*	Oelwein	State University of Iowa	1887
Cooling, A. A.	Wilton	Miami Medical	1872

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NAME	ADDRESS	COLLEGE	CLASS
Cottle, C. C	Marshalltown	Rush Medical	1889
Coulter, J. H	Summitville	Physicians and Surgeons, Keokuk	1890
Cowger, E. F.†	Riverton	Physicians and Surgeons, Keokuk	1880
Craig, J. H	Rockdale	Rush Medical	1875
Crawford, G. E	Cedar Rapids	Bellevue Hospital	1879
Crawford, J. P.*	Davenport	State University of Iowa	1883
Criley. B. H	Dallas Centre	Jefferson Medical	1871
Crosby, I. F	Menlo	Physicians and Surgeons, Chicago	1889
Crouse, D. W	Waterloo	Long Island Medical	1869
Crouse, Eugene A	Grundy Center	University of Pennsylvania	1870
Cushman, R. A.†	Sanborn	Dartmouth Medical	1882
Cutler, F. H.*	Bancroft	Chicago Medical	1882
Dalbey, James W.*	Cedar Rapids	Physicians and Surgeons, New York	1888
Darnall, C. F	Llano, Texas	Rush Medical	1882
Davies, J. C	Emmetsburg	State University of Iowa	1880
Davis, W. H	Maquoketa	Jefferson Medical	1861
Dean, H. M	Muscatine	Physicians and Surgeons, New York	1861
Deering, A. A.*	Boone	Maine Medical	1868
De Lano, A. H	Lone Tree	State University of Iowa	1887
Dempsey, P. J	Cascade	Chicago Medical	1885
De Tarr, D. N	Boone	University of Michigan	1880
Dewey, W. F.†	Moville	Medical Department Iowa State University	1884
Diehl, C. E.†	Valley Junction	State University of Iowa	1893
Divine, James H.†	Sioux Rapids	Physicians and Surgeons, Keokuk Bellevue Hospital Medical, New York	1879 1883
Dixon, J. W	Burlington	Trinity and Queen's University, Canada	1890
Doolittle, J. C	Independence	Rush Medical	1887
Dorr, Ed. E.*	Des Moines	State University of Iowa	1889
Dorsey, F. B.*	Keokuk	Physicians and Surgeons, Keokuk	1881
Dosh, G. W	Brighton	Rush Medical	1879
Doty, E. A	Oxford	State University of Iowa	1885
Druneler, C. M.*	Panora	St. Louis Medical	1876
Dudley, E.†	Paullina	Rush Medical	1886
Duncan, M. J	Pleasantville	Keokuk Medical College	1892
Dunkelberg, E. E.*	Frederica	State University of Iowa	1886
Dunkelberg, R. A	Denver	University of Michigan	1880
Eckley, W. T	Chicago, Ill	State University of Iowa	1884
Eiskamp, G. H.*	Washington	Physicians and Surgeons, Keokuk	1892
Emery, H. G.*	Des Moines	University of Michigan	1889
Emmert, J. M.*	Atlantic	Jefferson Medical	1872
Enfield, Charles	Jefferson	Physicians and Surgeons, New York	1869
Ensign, H. D	Boone	Chicago Medical	1875
Evans, O .E *	Gowrie	Physicians and Surgeons, Keokuk	1879
Evans, R.†	Ft. Dodge	Detroit Medical	1888
Ewers, H. F	Burlington	Castleton	1853
Failor, Benj. M	Newton	Jefferson Medical	1855
Fairchild, D. S.*	Clinton	Albany Medical	1868
Farnsworth, D. W	Galva		

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NAME	ADDRESS	COLLEGE	CLASS
Farnsworth, P. J.	Clinton	Physicians and Surgeons, New York	1860
Farr, H. S.*	Madrid	State University of Iowa	1881
Fellows, E. D.†	Valley Junction	Keokuk Medical	1892
Ferguson, J. W.	Ottumwa	Physicians and Surgeons, Keokuk	1880
Finch, H. C.*	Lynnville	Medical College of Indiana	1881
Finlayson, D. W.*	Des Moines	University of Michigan	1875
Fleming, J. C.	Burlington	Jefferson	1871
Fordyce, Oscar	Guthrie Center	Physicians and Surgeons, Chicago	1885
Foxworthy, O. W.*	Weldon	Physicians and Surgeons, Keokuk	1884
Frederick, Mary D.*	Des Moines	Physicians and Surgeons, Keokuk	1884
Frizelle, C. H.	Viele	State University of Iowa	1886
French, L.	Davenport	Berkshire Medical	1853
Fuller, Geo. H.	Delhi	Chicago Medical	1869
Fullerton, O. J.	Waterloo	State University of Iowa	1886
Fullerton, P. J.*	Raymond	University of Michigan	1879
Giest, Geo. F.	Danville	Jefferson Medical	1877
Getz, H. L.*	Marshallton	Jefferson Medical	1877
Gilman, H. A.	Mt. Pleasant	Dartmouth Medical	1866
Gorrell, J. R.*	Newton	University of Buffalo	1860
Gould-Fosne, Edith	Des Moines	Woman's Medical, Philadelphia	1878
Graham, C. C.†	Baxter	State University of Iowa	1884
Graham, W. F.*	Atlantic	Rush Medical	1880
Greene, Joel H.	Dubuque	Buffalo	1875
Griffin, C. C.	Vinton	University of Michigan	1868
Grimmell, G. H.	Jefferson	Physicians and Surgeons, Keokuk	1874
Grossman, D. S.*	Minburn	University of Pennsylvania	1877
Guthrie, J. R.*	Dubuque	State University of Iowa	1884
Hackett, C. J.	Le Mars	University of New York	1861
Hagebeck, A. L.	Davenport	State University of Iowa	1883
Hale, W. W.*	Des Moines	Physicians and Surgeons, Keokuk	1877
Hamilton, C. H.	Dubuque	Rush Medical	1873
Hanawalt. G. P.*	Des Moines	Med. Dept. Georgetown University, D. C.	1864
Hanna, Rebecca	Red Oak	State University of Iowa	1874
Hathaway, L. B.	Reinbeck	Rush Medical	1877
Hatton, J. B.*	Des Moines	Physicians and Surgeons, Keokuk	1871
Hazen, E. H.*	Des Moines	Charity Hospital Medical	1866
Harp, J. F.	Prairie City	State University of Iowa	1884
Harvey, S. N.	Neola	Bellevue Hospital Medical	1875
Harriman, O. B.	Hampton	Dartmouth Medical	1860
Heilman, E. C.*†	Ida Grove	Ohio Medical	1877
Henry, C. W.	Coon Rapids	Rush Medical	1884
Hewitt, S. R.	Charles City	Rush Medical	1867
Hess, Elizabeth*	Iowa City	State University of Iowa	1874
Hiatt, F. M.	Red Oak	Rush Medical	1865
Hibbs, G. B.*†	Mitchellville	Physicians and Surgeons, Chicago	1889
Hill, Gershom H.	Independence	Rush Medical	1874
Hill, M. W.	Iowa Falls	Physicians and Surgeons, Keokuk	1881

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NAME	ADDRESS	COLLEGE	CLASS
Hill, Nancy M.	Dubuque	University of Michigan	1874
Hillis, D. B.	Keokuk	St. Louis Medical	1847
Hills, Sarah S.	Adel	University of Michigan	1876
Hinshaw, Wm.*	Dallas Center	Physicians and Surgeons, Keokuk	1874
Hobby, C. M.*	Iowa City	Bellevue Hospital Medical	1870
Hobson, A. J.*	Hampton	State University of Iowa	1884
Hœring, G. P.	Walnut	State University of Iowa	1888
Hoff, A. W.	Des Moines	Iowa College Phys. and Surs., Des Moines	1886
Hoffman, D. A.	Oskaloosa	Western Reserve Medical	1848
Hoffman, R. C.	Oskaloosa	Jefferson Medical	1883
Holland, J. E.	Mt. Pleasant	Bellevue	1890
Holliday, J. W.*	Burlington	Physicians and Surgeons, Keokuk	1869
Hornibrook, E.	Cherokee	University of Victoria, Canada	1861
Hostetter, J. I.	Co'o	Chicago Medical	1880
Howe, W. S.	Hawarden	Bellevue Hospital Medical	1882
Hugg, A. A.	Oskaloosa	Jefferson	1882
Hughes, J. C.*	Keokuk	Physicians and Surgeons, Keokuk	1871
Hull, A. G.*†	Des Moines	State University of Iowa	1890
Hunter, H. E.	Newton	Western Reserve Medical	1869
Hutchins, J. H.	Hampton	Rush Medical University of New York City	1871 1881
Hutchinson, Woods	Des Moines	University of Michigan	1884
Ingells, J. B.	Meriden	Bellevue Hospital Medical	1878
Irish, H. R.	Forest City	State University of Iowa	1883
Jackson, D.	Pleasantville	Kentucky Medical College	1865
Jenkins, E. R.	Washington	Missouri Medical, St. Louis	1866
Jenkins, Geo. F.	Keokuk	Missouri Medical, St. Louis	1866
Jepson, Wilhelm*	Sioux City	State University of Iowa	1886
Jewell, P. M.*	Ossian	University of Michigan	1873
Jones, N. Jasper	Shelby	State University of Iowa	1883
Jones, U. C.	Breda	Iowa College Physicians and Sur., Des Moines	1885
Jones, Geo. N.	Burlington	McGill University, Montreal	1874
Jonsson, C.	Clinton	College of Iceland	1888
Joor, Peter*	Maxwell	State University of Iowa	1881
Joraleman, J. C.	Toledo	Rush Medical	1877
Keables, H. F.	Des Moines	University of Pennsylvania	1877
Kelleher, T. F.*	Des Moines	State University of Iowa	1878
Kemper, J. F.*	West Burlington	Physicians and Surgeons, Keokuk	1885
Kenefick, M. J.†	Algona	Rush Medical	1892
Kennedy, J. F.	Des Moines	University of New York City	1848
Kessell, Geo.	Cresco	Rush Medical	1885
Kessler, J. B.*	Iowa City	State University of Iowa Bellevue Hospital Medical	1877 1883
King, Azuba D.*	Des Moines	State University of Iowa	1876
King, E. H.	Muscatine	Detroit Medical	1870
Kinnier, W. H.	Dubuque	Albany Medical	1870
Kirkendall, E. E.	West Burlington	State University of Iowa	1885
Knott, T. B.†	Sioux City	Columbian University	1893

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Krejci, J. C.	Sioux City	Vienna, Austria	1862
Kulp, J. H.	Davenport	State University of Iowa	1872
Lacey, T. B.	Council Bluffs	Chicago Medical	1875
Ladd, J. A.	Traer	Physicians and Surgeons, Keokuk	1856
La Force, W. B.	Ottumwa	Chicago Medical	1891
La Force, D. A.	Ottumwa	College Physicians and Surgeons, Keokuk	1863
La Grange, J. W.	Marion	Rush Medical	1875
Lakin, A. M.	Yale	Rush Medical	1884
Latta, W. J.	Des Moines	Chicago Medical	1881
Layton, H. R.	Leon	Physicians and Surgeons, Keokuk	1876
Leech, C. A.*	Keokuk	Physicians and Surgeons, Keokuk	1876
Leipziger, H. A.	Burlington	Bellevue Medical	1881
Leith, A. R.	Wilton	State University of Iowa	1882
Le Roy, H. C.*	Des Moines	University, Victoria	1857
Lewellen, P. W.	Clarinda	Ohio Medical	1865
Lewis, C. G.	Ottumwa	Physicians and Surgeons, Keokuk	1850
Lewis, John S.	Dubuque	Jefferson Medical	1868
Lewis, J. R.	Grinnell	Bellevue Hospital Medical	1885
Limbeck, D. W.	Mediapolis	Starling, Maine	1879
Little, Geo. B.	Burlington	St. Louis Medical	1885
Littig, L. W.*	Iowa City	State University of Iowa University of Pennsylvania College of Surgeons, London	1883 1884 1887
Little, F. H.	Muscatine	State University of Iowa	1879
Lloyd, F. W.	Merservey	Kentucky School of Medicine	....
Louthan, B. S.*	Sutherland	State University of Iowa	1873
Love, J. S.	Springville	Jefferson Medical	1856
Love Lady, J. M.†	Hamburg	Missouri Medical	1887
Lowry, O. W.	Grand Junction	Physicians and Surgeons, Keokuk	1873
Lukens, C. J.	Oskaloosa	Missouri Medical College	1881
Lytle, S. S.	Iowa City	State University of Iowa	1878
Macrae, Donald*	Council Bluffs	Edinburg, Scotland	1861
Marsh, C. F.	Mt. Pleasant	University of Michigan	1869
Mason, Kate A.	Mt. Vernon	Woman's Medical, Chicago	1885
Maxwell, Thos. J.*	Keokuk	Physicians and Surgeons, Keokuk	1861
McAllister, Charles	Spencer	Berkshire Medical, Massachusetts	1865
McCarthy, J. F*	Dubuque	Minneapolis Hospital	1883
McCaw, W. H.	Swedesburgh	Physicians and Surgeons, Keokuk	1878
McCleary, H. C.	Indianola	Rush Medical	1881
McCleary, J. D.*	Indianola	Physicians and Surgeons, Keokuk	1867
McClees, C. H	Marne	State University of Iowa	1881
McClure, A. W.*	Mt. Pleasant	University of Pennsylvania	1860
McClure. R. A.†	Van Meter	Chicago Medical	1894
McClure, T. G.	Douds	Physicians and Surgeons, Keokuk	1878
McConnaughey, D. S.	Washington	Physicians and Surgeons, Keokuk	1867
McCowen, Jennie.	Davenport	State University of Iowa	1876
McCulloch, Geo.	Humeston	Rush Medical College	1873
McCune, J. H.	Kirkville	Rush Medical	1874

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McDowell, G. F.	Clear Lake	University of Michigan	1869
McGorrisk, E. J.*	Des Moines	St. Louis University	1856
McKitterick, N.	Burlington	Rush Medical	1880
McKlveen, H. B.†	Chariton	Physicians and Surgeons, Chicago	1890
McLain, W. H.	Beaman	Chicago Medical	1878
McLean, J. W.	Fayette	Rush Medical	1869
McMackin, W. W.	Lade City	Missouri Medical College	1880
McMorris, J.*	Belle Plaine	University of Michigan	1864
McVay, J. D	Lake City	Physicians and Surgeons, Keokuk	1873
Mehler, F. C.*	New London	Rush Medical	1863
Meredith, M	Vinton	Ohio Medical	1866
Middleton, W. D.*	Davenport	Bellevue Hospital	1868
Milholland, John	Winterset	Cincinnati College Medicine and Surgery	1874
Minges, Geo	Dubuque	Bellevue Hospital	1874
Miller, E. C	Rockwell	Chicago Medical	1874
Miser, H. W.†	Lovilia	Physicians and Surgeons, Keokuk	1864
Moon, A. C.†	Williamsburg	State University of Iowa	1884
Moorehead, S. W.	Keokuk	Physicians and Surgeons, Keokuk	1883
Morse, W. E. H.†	Algona	University of Michigan, Ann Arbor	1885
Mueller, W. J.	Dyersville	Nancy, France	1368
Muller, J. A.*	Dyersville	State University of Iowa	1891
Murphy, M. J.	Cumberland	State University of Iowa	1885
Neff, G. R.	Farmington	State University of Iowa	1870
Nestor, R. J.	Hudson	State University of Iowa	1890
Neumann, P. C.	Burlington	State University of Iowa	1887
Newton, W. H	Ft. Madison	Physicians and Surgeons, Keokuk	1890
Nicol, J. H	Lacona	Physicians and Surgeons, Keokuk	1873
Noel, J. A.*	Redfield	Missouri Medical, St. Louis	1886
Nossaman, A. J.†	Leighton	Keokuk Medical	1890
Noyes, James H.†	Ogden	Physicians and Surgeons, New York	1860
Nysewander, C	Dés Moines	Starling Medical	1879
O'Brien, Chas. D.	Ackley	Physicians and Surgeons, Keokuk	1870
Osborne, E. W.	Tacoma, Wash		
Ormiston, J. S.	New Sharon	State University of Iowa	1876
Overfield, E. E.*	Elma	State University of Iowa	1888
Overholt, D. W	Columbus Junction	Bellevue Hospital, Medical	1872
Overholt, Jno. L	Columbus Junction	State University of Iowa	1887
Park, W. M	Indianola	Physicians and Surgeons, Keokuk	1876
Patterson, M. F.†	Fonda	Cleveland Medical	1881
Pattison, I	Oelwein	University of Buffalo	1867
Payne, Ira D.	Linden	State University of Iowa	1880
Peck, Frank B	Mt. Pleasant	Chicago Medical	1883
Pennington B. S.	Kossuth	Keokuk Medical College	1891
Pierce, S. N.*	Cedar Falls	Vermont Medical	1856
Pipino, W. C.	Des Moines.	University of Maryland	1873
Potter, I. L	Ackley	State University of Iowa	1870
Porterfield, E.*	Spring Hill	Bellevue Hospital Medical	1883

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NAME	ADDRESS	COLLEGE	CLASS
Porterfield, W. F.*	Atlantic	Chicago Medical	1879
Powell, L. B.*	Albia	Physicians and Surgeons, Keokuk	1882
Powers, F. W.*	Reinbeck	State University of Iowa	1889
Powers, H. A.†	Emmetsburg	State University of Iowa	1882
Powers, J. L	Reinbeck	Physicians and Surgeons, Keokuk	1876
Powers, M. J	Iowa Falls	Pittsburg, Massachusetts	1865
Preston, C. H	Davenport	State University of Iowa	1873
Priestly, J. T.*	Des Moines	University of Pennsylvania	1874
Raymer, H. S	Cedar Rapids	Physicians and Surgeons, Chicago	1885
Rawson, A. A	Corning		
Reynolds, A	Clinton	University of Vermont	1864
Reynolds, E. M	Centerville	Physicians and Surgeons	1879
Reynolds, J. D.*	Creston	Physicians and Surgeons, Keokuk Rush Medical	1872 1885
Richards, W. O	Waterloo	University of Michigan	1855
Riley, John†	Exira	State University of Iowa	1880
Riordan, M. F	Melrose	State University of Iowa	1874
Ristine, H. G	Fort Dodge	Rush Medical	1869
Ristine, J. M	Cedar Rapids	Bellevue Hospital Medical	1873
Roberts, J	Osceola	Ohio Medical	1865
Roberts, T	St. Charles	Physicians and Surgeons, Keokuk	1874
Robertson, J. C	Council Bluffs	State University of Iowa Bellevue Hospital Medical	1873 1883
Robinson, S. E	West Union	Rush Medical	1867
Rodgers, H. S	Red Oak		
Rood, L. D.†	Des Moines	University of Vermont	1881
Roome, J. S	Calmar	University of Michigan	1866
Rowe, G. D.*	Boone	Bowdoin Medical, Maine	1868
Ruml, Wentzle	Cedar Rapids	Chicago Medical	1891
Ruth, C. E.*	Keokuk	State University of Iowa	1883
Sansom, J. E	Tipton	Rush Medical	1878
Sampson, F. E.†	Creston	Rush Medical	1891
Saunders, C. J.†	Ft. Dodge	Medical Department Iowa State University	1884
Saunders, C. W.*	Manly	Rush Medical	1884
Savage, Jno. P	Sioux City	Miami Medical	1878
Schindel, C. M	South Omaha, Neb.	Bellevue Hospital Medical	1887
Schmidt, F. E	Muscatine	Keokuk Medical College	1891
Scott, Clifton†	Des Moines	Kentucky School of Medicine	1883
Scott, E. C	Maxwell	State University of Iowa	1880
Scott, Walter E.*	Adel	Iowa College of Physicians and Surgeons	1891
Schifferle, Edward†	Creston	Rush Medical	1884
Schooler, Lewis*	Des Moines	Kentucky School of Medicine	1878
Scroggs, J. A	Keokuk	Rush Medical	1873
Sears, Reuben	Marshalltown	Rush Medical	1853
Seelye, W. K	Waterloo		
Seymour, F. E	Fort Dodge	State University of Iowa	1879
Sharp, Mila B	Madison, Wis.	Columbus Medical College	1884
Sherman, W. B	Manchester	Cleveland Medical	1870

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NAME	ADDRESS	COLLEGE	CLASS
Sherman, E. Am	National	University of Michigan	1879
Sherwood Thos	Wilton	Miami Medical	1878
Shore, F. E. V.*	Des Moines	University of Michigan	1886
Shrader, J. C.*	Iowa City	Physicians and Surgeons, Keokuk Long Island Hospital Medical	1865 1870
Sigworth, H. W	Anamosa	Rush Medical	1863
Singleton, E. M	Marshaltown	Chicago Medical	1891
Skinner, G. N	Truro	Iowa College of Physicians and Surgeons	1889
Skinner, Geo. R.*	Cedar Rapids	Bellevue Hospital Medical	1866
Skinner, J. O.*	Des Moines	Starling Medical Physicians and Surgeons, Keokuk	1850 1855
Sloan, M. G.*	Dexter	Rush Medical	1873
Smead, C. C	Knoxville	Rush Medical	1880
Small, W. B.*	Waterloo	Chicago Medical	1890
Smith, C. W	Muscatine	State University of Iowa	1875
Smith, J. W	Charles City	Yale Medical	1855
Smith, E. R.*	Toledo	Rush Medical	1876
Smith, Irving W	Ames	Jefferson Medical	1875
Smouse, D. W.*	Des Moines	University of Maryland	1876
Snook, C.*	Fairfield	Physicians and Surgeons, Keokuk	1869
Sones, C. O	Panora		
Spicer, S. S	Blairstown	St. Louis Medical	1873
Spilman, S. A	Ottumwa	Chicago Medical	1879
Stalford, Geo. A.†	West Side	Iowa College Physicians and Surgeons	1893
Stanton, T. P.*	Chariton	Rush Medical	1879
Stanton, J. E	Chariton	Physicians and Surgeons, Keokuk	1872
Staples, G. M	Dubuque	Harvard University	1855
Stevens, J. Scott	Cedar Falls	Physicians and Surgeons, Chicago	1885
Stitzell, Geo	Nevada	Pennsylvania Medical	1858
Stockman, G. C	Mason City	Rush Medical	1879
Stockslager, S. O	Boone	Bellevue Hospital Medical	1874
Stoner, H. H	Rock Rapids	St. Joseph Medical	1885
Stoner, Chas. E	Des Moines	Physicians and Surgeons, Keokuk	1892
Stover, B. H.†	Swaledale	Long Island Medical	1891
Stults, M. F	Wiota	Physicians and Surgeons, Keokuk	1878
Summers, N. P.†	Van Meter	Columbus Medical	1887
Surber, L. H	Indianola	Physicians and Surgeons, Keokuk	1877
Taintor, L. K	Strawberry Point	Missouri Medical	1886
Talbod, J. H.*	Castana	State University of Iowa	1884
Tedrow, J. B	Williams	University of Michigan	1886
Teter, D. P	Omaha, Neb	Baltimore Medical	1889
Thornton, J. H	Lansing	Rush Medical	1879
Thomas, F. S.*	Council Bluffs	Physicians and Surgeons, Keokuk	1870
Thornburg, M. W	Redfield	Bellevue Hospital Medical	1891
Townsend, D. J.*	Lohrville	Iowa Coll. Phys. and Surgeons, Des Moines	1887
Todd, W. A.*	Chariton	Indiana Medical	1874
Turner, A. B. L	Colfax	Physicians and Surgeons, Keokuk	1884
Turner. L. C. S.*	Colfax	Physicians and Surgeons, Keokuk	1882

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NAME	ADDRESS	COLLEGE	CLASS
Tuttle, Mary B.*	Burlington	Women's Medical, Chicago	1888
Tyler, E. K	Muscatine	State University of Iowa	1882
Vail, A. M	Rock Rapids	Chicago Medical	1882
Vance, F. E	Eddyville	Rush Medical	1887
Van Werden, W.†	Des Moines	Rush Medical	1884 / 1885
Voldeng, M. N	Independence	Physicians and Surgeons, Chicago	1887
Wahrer, C. F.*	Ft. Madison	Physicians and Surgeons, Keokuk	1882
Wallace, Chas. E	New Sharon	Miami Medical	1885
Wallace, W. S	Camanche	Physicians and Surgeons, Keokuk	1878
Wallace, J. E	Belmond	Bellevue Hospital	1890
Waples, M. H	Dubuque	Jefferson Medical	1865
Ward, G. B.*	Fairbank	University of Michigan	1880
Ward, W. H	Des Moines	Physicians and Surgeons, Keokuk	1862
Waterman, J. O	Council Bluffs	Iowa College of Physicians and Surgeons	1886
Waters, P. J	Redfield		
Watts, J. S	Millersburg	Jefferson Medical	1867
Watson, Wm.*	Dubuque	Rush Medical	1854
Warnack, B. F.†	Battle Creek	State University of Iowa	1881
Weir, F. A.	Jesup	Rush medical	1879
Weismann, A	Keokuk	Physicians and Surgeons, Keokuk	1864
Welch, Ira L.*	Humboldt	Cleveland, Ohio	1879
Wells, Fred L.†	Des Moines	Bellevue Hospital	1888
Wells, Jacob W	Independence	Rush Medical	1891
Whiting, H. C	Burlington		
Wick, D. M	Cedar Falls	Chicago Medical	1875
Williams, R. R	Manning	Rush Medical	1879
Williams, J. C	What Cheer		
Williamson, F. A.†	Hopkinton	Rush Medical	1886
Williamson, J	Ottumwa	Western Reserve Medical, Ohio	1852
Wilson, George M	Tipton	State University of Iowa	1877
Wood, Irving C	Logan	Jefferson Medical	1880
Woodworth, E. W.*	Peoria	Physicians and Surgeons, Keokuk	1873
Worley, Joshua	Belle Plaine	Starling Medical	1874
Wray, J. H.†	Des Moines	Jefferson Medical, Philadelphia	1877
Wright, A. L.*	Carroll	Rush Medical	1874
Wright, J. C	Clear Lake	State University of Iowa	1880
Young, H. B.*	Burlington	Chicago Medical	1875
Young, H. C	Bloomfield	Keokuk Medical	1891

CORRESPONDING MEMBERS.

Grant, W. W	Denver Colorado
Hay, Walter	Chicago, Illinois
Holmes, G. W	Tabriz, Persia
Steele, U	Beloit, Kansas
Todd, J. F	Chicago, Illinois

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